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THE YEAR IN REVIEW

In last year's letter, I told you that my three objectives for 2002 were as follows: (1) secure profitable new design wins with existing customers; (2) diversify our business with design wins for new customers and new markets using new technologies; and (3) drive microdisplays into the market. We accomplished our first two objectives and also drove meaningful change in microdisplays. As a result, we have significantly improved the health and future prospects of our company.

We expanded our product portfolio from simple monochrome LCD products and microdisplays to a full array of color LCD products, OLED displays, custom monitors, and microdisplay engines. We have secured numerous design wins and expanded our market from only cell phones to multiple markets that include computers, servers, industrial controls, medical devices, and high-definition televisions. We grew our customer base from one major customer producing 75% to 85% of our revenue, which has been the situation of the company for the past decade, to multiple customers, none of which we believe will comprise more than 20% of our revenue in 2003. Through key acquisitions and investments, we expanded our design and manufacturing capabilities so that we now provide customers with global, end-to-end support that meets the needs of every stage in a product lifecycle.

By employing a combination of organic growth and strategic acquisitions, we capitalized on our unique strengths. In our newly named Integrated Systems and Displays division, this meant focusing on our display design expertise and flexible, low-cost, high-volume offshore manufacturing. In our Microdisplay division, it meant bolstering our technology position and accessing new markets for our LCoS® technology. As we executed our strategy through 2002 and the early part of 2003, it became evident that our company was evolving into two distinct and independent businesses. Consequently, the Board of Directors recently decided to separate these businesses by spinning off our Microdisplay business in the summer of 2003. This will allow each business to focus upon its own growth opportunities. We believe that this separation will allow the market to value the stock of each company fairly and accurately based upon its unique strengths and opportunities for the future.

THE YEAR IN REVIEW: INTEGRATED SYSTEMS & DISPLAYS

As a result of our strategic actions in 2002, I believe we now hold a unique place in the market: we are the only provider of design engineering and electronic manufacturing services (EMS), with specialized expertise in display technologies.

In 2002, our display design expertise enabled us to secure 28 new design wins. Only 11 of those wins or 39% came from the cell phone market. The rest represent a variety of markets, such as industrial, consumer and computer. They also represent a spectrum of display technologies from monochrome to full active

matrix color. While design wins are necessary, they are not sufficient. Although I am pleased with the design wins and market diversification, I am more focused on how many of these wins will produce revenue for our company. As we enter into 2003, I am pleased to report that we have already shipped production relating to nearly half of the 2002 design wins and that we have a strong backlog going into the second quarter of 2003 for products based on these design wins.

In an effort to continue to drive diversification and to increase our market share, we added standard products to our display portfolio and, early in 2003, established an Orlando sales office to support this product line. We staffed that office with sales personnel who have years of experience with these products and an existing list of customers. We plan to use our design engineering and manufacturing services capability to expand the business we do with customers through the Orlando sales group.

We furthered strengthened and broadened our product offering in 2002 by acquiring the business of AVT Advanced Video Technologies. This business specializes in the design, customization, and integration of high-resolution CRT and flat panel monitors. The major markets served by AVT are industrial, medical, and military. AVT allowed us to enter the custom large-screen monitor and flat panel markets, greatly increasing our served market.

In 2002, we also wanted to focus on another one of our core strengths: high-volume Asian manufacturing. As a result, we acquired an EMS company, ETMA Corporation. ETMA has printed circuit board assembly and box-build capabilities and a low- to mid-volume domestic facility in Redmond, Washington handling a high mix of products in the medical, industrial, and computer server markets. When combined with our design expertise and low-cost Asian manufacturing capabilities, our ETMA acquisition has created powerful new opportunities for us. We now have EMS capability with a global footprint. We can offer customers end-to-end solutions from initial concept and design, to fast-turn new product introduction, to low-cost Asian manufacturing. Acquiring ETMA made us the only mid-tier manufacturing services company offering design expertise and low-cost offshore capability, with a unique expertise in display-centric products.

Because of all these activities, we are today able to provide customers with a unique combination of product design and development options coupled with an expanded array of products and services. Our manufacturing services range from specialized, smaller-volume demands, using our Tempe, Boston or Seattle locations, to higher-volume, low-cost demands, using our Asian manufacturing operations. In addition, our global sales and design engineering centers support every opportunity with a knowledge of both standard and custom displays that does not exist in any other EMS company.

continued on inside back cover

There are certain statements in the above letter to stockholders, which is part of this Annual Report, that are forward looking. Those statements usually describe potentialities with regard to the company and generally use such words as "plans," "expects," "anticipates," or "believes." For example, there are statements regarding estimated future income results, possible revenue growth, revenue concentration patterns, future product strategies, new product demand and applications, and plans regarding the spin-off of the microdisplay business. Each forward-looking statement in this Annual Report is speculative in nature and involves risks and uncertainties. The risks relative to new products like LCoS® include market and customer acceptance of new product technologies and technical, engineering, and production challenges associated with developing, manufacturing and marketing these new products. Other risks and uncertainties with regard to future operations of the company would include the ability of the company to secure future production orders, product demand and market acceptance risks for the customers' products, the impact of the world-wide foreign currency market on OEM sales, the impact of pricing and performance of products and services provided by competitors of the company, the impact of competitive manufacturing, the risk of customer concentration, technological difficulties, including difficulties in manufacturing and R&D development, and capacity and supply constraints or difficulties.

Readers of this Annual Report should be cautioned that the actual results of the company may materially differ from the forward-looking statements described above. For a more complete description of the various risks and uncertainties associated with the company's business, readers are directed to the company's Securities and Exchange Commission filings, especially those most recently filed, such as the Form 10-K.

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K
ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2002

Commission file number 1-4373

THREE-FIVE SYSTEMS, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware

(State or Other Jurisdiction
of Incorporation or Organization)

86-0654102

(I.R.S. Employer Identification No.)

1600 North Desert Drive, Tempe, Arizona

(Address of Principal Executive Offices)

85281

(Zip Code)

(602) 389-8600

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Exchange Act:

<u>Title of Each Class</u>	<u>Name of Each Exchange on Which Registered</u>
Common Stock, par value \$.01 per share	New York Stock Exchange
Preferred Stock Purchase Rights	New York Stock Exchange

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [X]

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2).
Yes ☒ No ☐

The aggregate market value of Common Stock held by nonaffiliates of the registrant (18,004,680 shares) based on the closing price of the registrant's Common Stock as reported on the New York Stock Exchange on June 28, 2002, was \$205,253,352. For purposes of this computation, all officers, directors, and 10% beneficial owners of the registrant are deemed to be affiliates. Such determination should not be deemed to be an admission that such officers, directors, or 10% beneficial owners are, in fact, affiliates of the registrant.

As of March 21, 2003, there were outstanding 21,286,039 shares of the registrant's Common Stock, par value \$.01 per share.

Documents Incorporated by Reference

Portions of the registrant's definitive Proxy Statement for the 2003 Annual Meeting of Stockholders are incorporated by reference into Part III of this Form 10-K.

THREE-FIVE SYSTEMS, INC.
ANNUAL REPORT ON FORM 10-K
FOR THE YEAR ENDED DECEMBER 31, 2002
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Statement Regarding Forward-Looking Statements

The statements contained in this report on Form 10-K that are not purely historical are forward-looking statements within the meaning of applicable securities laws. Forward-looking statements include statements regarding our "expectations," "anticipation," "intentions," "beliefs," or "strategies" regarding the future. Forward-looking statements also include statements regarding revenue, margins, expenses, and earnings analysis for fiscal 2003 and thereafter; technological innovations; future products or product development; our product development strategies; potential acquisitions or strategic alliances; the success of particular product or marketing programs; the amounts of revenue generated as a result of sales to significant customers; and liquidity and anticipated cash needs and availability. All forward-looking statements included in this report are based on information available to us as of the filing date of this report, and we assume no obligation to update any such forward-looking statements. Our actual results could differ materially from the forward-looking statements. Among the factors that could cause actual results to differ materially are the factors discussed in Item 1, "Business – Risk Factors."

PART I

ITEM 1. BUSINESS

Introduction

We design and manufacture display modules and display system solutions, develop and manufacture microdisplays, and provide electronic manufacturing services for original equipment manufacturers, or OEMs. Through our Integrated Systems and Display, or ISD, division, we offer a broad range of custom and standard display products and product solutions, including monochrome and color liquid crystal display, or LCD, components and modules, organic light emitting diodes, or OLEDs, cathode ray tubes, or CRTs, and flat panel monitors for use in the end products of OEMs. Our LCD modules are used in mobile handsets and other wireless communication devices as well as in the data collection, medical electronics, and other commercial, consumer, and industrial marketplaces. Through this division, we also offer electronic manufacturing services to OEMs, which include advanced engineering support, "designed for" services, automated printed circuit board assembly, in-circuit and functional testing, systems level integration and box build, turn-key packaging, fulfillment services, and turn-key supply chain management services, all of which enable our customers the ability to outsource all stages of product engineering, design, development, materials procurement and management, manufacturing, and testing. Through our Microdisplay division, we offer discrete microdisplay devices through completely integrated microdisplay engine solutions based on our liquid crystal on silicon, or *LCoS*®, microdisplay technology. Examples of applications for our microdisplay products and services include rear-projector, high-definition, televisions; front-projector multimedia and home theater projectors; and "near-to-eye" or personal display applications, including head-mounted monocular or binocular headsets or viewers for industrial, medical, military, commercial, and consumer applications. We market our services in North America, Europe, and Asia through a direct and representative technical sales force.

We recently announced that our board of directors has approved a decision to spin-off our Microdisplay division into a newly created and separately traded public company to be known as Three-Five Microdisplay, Inc., or TFMD. We expect that the proposed spin-off will allow each company to focus its attention and financial resources on its target markets. In addition, each company will be able to more aggressively pursue its distinct business model and better meet the needs of its customers. The transaction is also expected to provide each independent company with greater strategic and financial flexibility to support growth opportunities in the future. Under the proposed spin-off, we will first transfer our entire *LCoS* microdisplay business, including all related manufacturing and business assets, personnel, and intellectual property, to TFMD, a newly created subsidiary. Included in the transfer will be established manufacturing infrastructure, such as quality, logistics, planning, and procurement systems. We then expect to capitalize TFMD with approximately \$20 to \$25 million in cash, an amount that we believe will be sufficient to enable TFMD to achieve its business objectives. We will then distribute 100% of TFMD's common stock pro rata as a dividend to our stockholders. We have filed a ruling request with the Internal Revenue Service to qualify the spin-off of TFMD as a nontaxable transaction. In addition, we expect to file a Form 10 with the Securities and Exchange Commission within the next 60 days providing detailed information regarding the proposed spin-off. No stockholder vote will be required to effect the spin-off, and no consideration will be required to be paid by our stockholders in order to receive the stock of TFMD.

Our website is located at www.threefive.com. Through our website, we make available free of charge our annual report on Form 10-K, our proxy statement, our quarterly reports on Form 10-Q, our current reports on Form 8-K, amendments to reports filed under the Securities Exchange Act, and earnings press releases. We also post on our website the charters of our Audit, Compensation, and Nominating/Corporate Governance Committees; our various codes of ethics and any amendments of or waiver to those codes of ethics; and any other corporate governance materials contemplated by SEC and NYSE regulations.

Industry Overview

Displays

Display Technology

Prior to the 1970s, most commonly used displays and indicators had substantial limitations as to their use, especially in terms of size, life, and power consumption. LCDs were developed in the 1970s in response to these limitations, especially the demand for greater information content and less power consumption than was possible using light emitting diode, or LED, technology. LCDs, sometimes called flat panel displays, provide high-information content displays at competitive prices. LCDs now appear in products throughout the communications, office automation, industrial, medical, and commercial electronics industries. LCDs are one of the fastest growing of the established display industry segments.

An LCD modifies light that passes through or is reflected by it, rather than emitting light like an LED. An LCD generally consists of a layer of liquid crystalline material suspended between two glass plates. The liquid crystals align themselves in a predictable manner when stimulated electrically. The alignment produces a visual representation of the desired information. LCDs can display information in black and white or in a wide range of color combinations. LCD displays consist of a matrix of dots, called pixels, which are arranged in rows and columns that can be selectively energized to form letters or pictures. A principal advantage of LCDs over other display technologies, such as LEDs, is the ability to include thousands or even millions of pixels in a single display, which allows for greater information content.

There are two types of LCDs: active matrix and passive matrix. Active matrix LCD displays are relatively complex devices that require manufacturing operations involving very large capital investments. Historically, active matrix LCD displays have been used in larger, high-information content applications, such as laptop computers, but they are becoming more common in mobile devices, such as cellular handsets and PDAs. Passive matrix LCD displays are less complex and less expensive to manufacture. Currently, passive matrix LCDs are used in applications such as mobile handsets and PDAs, as well as in office equipment, data collection terminals, point-of-sale equipment, medical devices, transportation instrumentation, and industrial instruments and controls.

An LCD is primarily a reflective type of display. Other display technologies are also available. Recent progress in the development of organic electro-luminescent materials has revived interest in organic light-emitting diodes, or OLEDs. Two classes of electro-luminescent materials have been used in OLED development: small molecules and light-emitting polymers. The advantages promised by OLED technology include the ability to have thin, light-weight displays with low voltage, low power, a wide viewing angle, and a broad color gamut. OLEDs have only recently begun to be manufactured, but there is strong industry interest in OLEDs and a significant level of industry investment in the development of this technology.

Display Markets

Displays are becoming a ubiquitous feature in consumer, commercial, and industrial products. OEMs increasingly believe that a display interface is important because it makes products more useful and easier to operate. In addition, the increasing complexity and functionality of handheld products, such as wireless computing and communication devices, require OEMs to increase the visual performance and information content of the displays incorporated into their products. At the same time, the market continues to demand that OEMs incorporate displays with reduced power requirements and lower costs. Custom LCDs, including both monochrome and color displays, address these requirements for high performance, increased information content, low power, and low cost. In addition, OLED displays are making advances in technology development, cost reduction, and power consumption and are beginning to be used in mobile and other applications.

OEMs also seek ways to differentiate their products from the products of their competitors. Custom-designed display modules provide OEMs a cost-effective means to achieve this differentiation. In designing its product, an OEM must determine whether to use standard "off-the-shelf" display modules, to design its own custom display modules for production by a custom display manufacturer, or to enter into arrangements with a third party for custom display design and production. In making a decision to engage third parties for custom design and production, OEMs recognize that standard "off-the-shelf" displays may be more cost-effective, but make it more

difficult to differentiate their products from those of their competitors. In considering whether to design their own display modules, OEMs often recognize that their greatest strengths consist of consumer brand name recognition, market research and product development expertise, and highly developed sales and distribution channels. Advanced design and manufacturing processes require increasing investments for research and development, personnel, and equipment. Competitive market conditions require a shorter period of time from product conception to delivery, product differentiation, improved product user friendliness, and continually enhanced product performance and reduced product cost during the life cycle of the product. As a result of these factors and increasingly sophisticated and complex technology, it has become more difficult for even the leading OEMs to maintain the necessary technology, expertise, personnel, and equipment to design and produce internally all of the various components necessary for their products. As a result, there has been a trend toward outsourcing the design and production of components such as display modules.

In addition to design and production, OEMs have increased their use of third-party suppliers to add additional components to their products. This permits the integration of more of the manufacturing steps into fewer locations. This trend toward integration and outsourcing decreases the number of suppliers necessary to produce a final product and results in lower costs. We believe that combining the display module with other manufacturing services could be a key differentiator.

The products that we sell include both standard and custom displays. Applications include displays used in mobile handsets and other communications equipment; business, industrial, and transportation equipment; and computer, consumer, and industrial products. The display technologies that we focus on are LCDs, OLEDs, and CRTs. Historically, our emphasis was on small form factor displays, but we recently acquired a monitor product line with displays ranging up to 21 inches for use in industrial and governmental applications. We estimate that the world-wide market we service for display products was approximately \$12 billion in 2002.

Electronic Manufacturing Services

Historically, OEMs have been fully integrated, performing the engineering and design, new product introduction, assembly and manufacturing, testing, distribution and logistics, and aftermarket support functions for their products. In recent years, however, OEMs have been under intense pressure to reduce costs, focus on core competencies, and reduce supply chain investment. In response, they have increasingly outsourced these functions to electronic manufacturing services, or EMS, companies. By focusing on these functions, we believe that EMS companies have provided OEMs with cost savings, superior technological know-how, and access to more advanced manufacturing processes. These services enable OEMs to concentrate on their core competencies, such as product development, marketing, and sales. As a result of this outsourcing strategy, many OEMs are divesting a significant portion of their manufacturing facilities, and many newer OEMs are choosing to outsource rather than build an internal manufacturing infrastructure.

Today, the EMS industry consists of companies that provide a broad range of services, including engineering and design, new product introduction, printed circuit board assembly, or PCBA, box build, testing, distribution and logistics, and aftermarket support services for OEMs in the electronics industry. The penetration of EMS companies into the total available market remains low. Technology Forecasters, Inc. estimates that the total cost of goods sold outsourced by OEMs will grow from 18.9% in 2002 to an estimated 24.4% by 2005. As a result, Technology Forecasters, Inc. estimates the EMS industry will grow at 16.6% comparable annually from approximately \$92 billion in 2002 to \$139 billion in 2005. The trend toward outsourcing by OEMs has continued in the recent economic downturn, as OEMs are under increased pressure to pursue aggressive cost savings.

In addition, OEMs have continued to move manufacturing programs to lower cost regions and sought EMS providers with a global footprint. As a result, Asia's share of the global EMS market, as reported by Technology Forecasters, Inc., is estimated to increase from 29% in 2002 to 42% in 2006. We also believe that EMS providers with a global presence will grow faster than the industry average because they can offer multinational OEMs a comprehensive set of outsourced services through a single global manufacturing platform.

The factors driving OEMs to favor an outsourcing strategy include the following:

- *Reduced Total Production Cost.* OEMs must continually reduce costs to remain competitive. EMS companies can manufacture products at a reduced total cost to OEMs because of higher utilization of

manufacturing capacity, access to leading-edge manufacturing technologies, superior procurement and inventory management capabilities, and a continual focus on improving supply chain management practices from product design to aftermarket support.

- *Ability to Focus on Core Competencies.* By shifting design, manufacturing, testing, logistics and distribution, and aftermarket support functions to EMS companies, OEMs can focus their resources on their core competencies, including product development, marketing, and sales.
- *Access to Leading Technologies.* OEMs continually seek access to engineering expertise and manufacturing technologies necessary to build their increasingly complex products. OEMs are motivated to work with EMS companies to gain access to their expertise in product design, assembly, manufacturing, and testing technologies, as well as their expertise in global supply chain management and aftermarket support. In addition, EMS companies provide OEMs with access to advanced information systems, enabling OEMs to better monitor and control the global inventory and distribution of their products.
- *Reduced Supply Chain Investment.* Outsourcing to EMS companies allows OEMs to lower their investment in inventory and manufacturing assets and shift more of their fixed costs to variable costs, enabling them to increase their return on assets. As a result, OEMs can react more quickly to changing market conditions and allocate capital to other core activities.
- *Accelerated Time-to-Market and Time-to-Global Volume.* By using EMS companies with capabilities in major global markets, OEMs can expand sales and simultaneously introduce new products worldwide. Once products have been developed, OEMs must quickly reach commercial volume production and distribute their products in all major markets in order to achieve the greatest impact in a competitive market.

Microdisplays

Industry Background

Market trends demand high-information content, power-efficient displays with increasing functionality and smaller sizes at low costs. Microdisplays provide a response to those demands. Microdisplays are thumbnail sized, but deliver high-resolution images, including full motion video and computer screen content. The tiny image on a microdisplay is projected onto a screen or other surface for individual or group viewing or is viewed through a magnifying device similar to a viewfinder in portable applications.

As a result, microdisplays are increasingly used in a wide array of products in established and developing markets. These products include rear projectors, such as large-screen televisions; multimedia front projectors, such as those used in conference room and home theater settings; and various "near-to-eye" industrial, medical, military, commercial, and consumer applications.

Rear-projection televisions shine a magnified image onto the back of a translucent screen for viewing; multimedia front projectors cast the image produced by a microdisplay on a distant screen; and near-to-eye microdisplay devices produce a virtual image that can be viewed through a magnifying headset or viewer.

Display Resolution Standards

The following table sets forth various standard resolutions with pixel count, or the number of dots on a screen, and applications for liquid crystal on silicon microdisplays:

<u>Resolution</u>	<u>Pixel Array</u>	<u>Total Pixel Count</u>	<u>Applications</u>
Computer and hand-held device standards:			
QVGA	320x240	76,800	Low-resolution standard, primarily used today in viewfinders for camcorders, digital cameras, low-end hand-held video games, and other consumer products
SVGA	800x600	480,000	Viewfinders in hand-held devices and head-mounted displays
XGA	1024x768	786,432	Portable audio-visual projectors and television applications
SXGA	1280x1024	1,310,720	High-end portable audio-visual projectors, rear-projection monitors
UXGA	1600x1200	1,920,000	High-end notebook computers used for multimedia applications and high-end computer monitors
WUXGA	1900x1200	2,280,000	High-end computer monitors and multimedia applications
Television Standards:			
NTSC	640x480	307,200	Current most commonly used television standard
HDTV1	1280x720	921,600	Partial high-definition digital television and imaging applications
HDTV2	1920x1080	2,073,600	Full high-definition digital television and other high-end imaging applications

Rear-Projector Applications

The rear-projector market consists primarily of televisions. Substantial growth is anticipated for microdisplays in large-screen, high-resolution televisions and also in new types of large-screen monitors.

One of the primary drivers in the television market is the conversion to high-definition television, or HDTV. Until now, HDTV has been very slow to emerge, despite government-mandated broadcasting of HDTV resolution, because HDTV sets have been unavailable at costs acceptable to the broad consumer market. It now appears that rear-projection, high-definition televisions using microdisplays will become the primary avenue for delivering large-screen, high-definition televisions at reasonable costs. For smaller screen sizes, it appears that AMLCD-based televisions will become important in the HDTV market.

Another primary driver in the television market is the worldwide conversion from analog to digital format. This conversion also is being mandated in the United States, Europe, and Asia by governments and government agencies. For example, in the United States, the FCC has mandated that all television transmissions be digital by 2005. The result is that analog televisions that are digital ready are quickly gaining market share over analog-only televisions.

Within the home electronics market, there is a continuing trend toward larger and higher-resolution video screens for home entertainment systems. These systems are segmented into three categories: high-end home theater; large-screen, rear-projection television; and smaller-screen, direct-view television. Each of these segments is growing rapidly. Consumers are willing to spend more for higher quality entertainment in their homes to support their diverse television, video, Internet, and other digital entertainment needs.

Front-Projector Applications

The front-projector market is a large, well-developed market, with an estimated 1.75 million units shipped worldwide in 2002 and a projected 4 million units to be shipped in 2005. These products, which are typically referred to as audio-visual or multimedia projectors, are generally fixed or portable products used in business applications. There is a trend to developing front projectors that have higher brightness, higher resolution, and reduced size and cost. Concurrently with the movement to large-screen, high-definition televisions is an expansion of the front-projector market to include home theater applications. A new generation of higher resolution front projectors will be required for full HDTV2.

Near-to-Eye Applications

The near-to-eye market for microdisplays consists of an established electronic viewfinder market and an emerging high-resolution viewer market. The established market is served by high-volume, low-cost monochrome and color microdisplay viewfinder products, nearly all of which are integrated into camcorders and digital cameras. These viewfinder products are low-resolution devices, typically QVGA.

In the emerging high-resolution near-to-eye markets, professional applications in the industrial, medical, and military markets have been the first to develop. These markets demand superior image quality and high resolution for image, video, and multimedia applications. Wearable computing, endoscopic surgery, augmented reality systems, and rifle scope applications are examples of product categories in this segment. Examples of products emerging in professional and commercial applications include wearable products for enterprise network access, headmounted displays for night vision systems, and viewers for test and measurement systems. As prices for near-to-eye high-resolution microdisplays decline, professional and commercial applications are expected to broaden.

The consumer market is expected to be by far the largest unit volume microdisplay market. Anticipated initial applications include headmounted display products for video games, portable DVD viewers, and secondary monitors for privately viewing notebook computers. Headmounted microdisplays provide features that are unavailable in current video game products. These features include head tracking and stereo and 3-D vision, which provide superior game immersion and realism. Products currently offered in the headmounted video game market have low resolution and have experienced limited market success. By contrast, liquid crystal on silicon microdisplays offer high resolution and a much improved video game experience.

The broadband wireless communications market also presents a large opportunity for microdisplays. In the communications market, microdisplay technology is seen as the potential method for delivering high-information content at low cost and with low power consumption for mobile, hand-held communication devices. Timing of the development of the broadband wireless near-to-eye microdisplay market is uncertain and has been curtailed by the limited availability and the high price of broadband wireless services. Nevertheless, many companies have prototype programs underway to assess the use of liquid crystal on silicon microdisplays for portable wireless devices.

Limitations of Competing Technologies

Currently, the large-screen, rear-projection television market is being served primarily by incumbent cathode ray tube, or CRT, technology as well as by emerging active matrix polysilicon and digital micro-mirror device, or DMD, technologies. CRTs used in rear-projection televisions utilize three projection devices to create a full motion, full color image. Projection CRTs present resolution, size, weight, cost, and performance issues. Polysilicon microdisplays use a transmissive silicon-based technology. Polysilicon microdisplays are available only from two large Japanese companies. At resolutions above XGA, polysilicon microdisplays generally need special optics and are large and expensive. In addition, the transmissive nature of polysilicon produces an undesirable screen door effect on the image. DMD microdisplays, which also are silicon based, are reflective devices containing an array of individually movable micro-mirrors, one for each pixel. DMD microdisplays are a proprietary product of Texas Instruments. DMDs are relatively expensive to manufacture, especially for larger devices with higher resolutions, and the manufacturing facilities involve major capital investments. In addition, DMD microdisplays have image quality issues, particularly related to color depth and video image fidelity.

Most front projectors currently use either transmissive polysilicon or DMD microdisplays. Use of polysilicon and DMD technologies in the front-projector market has the same limitations as in the rear-projection market. As higher resolution images are demanded by the front-projector market, the limitations of polysilicon and DMD become more severe. Neither polysilicon nor DMD technology is likely to achieve full HDTV2 resolutions at reasonable cost.

Direct-view displays currently are the primary means of providing information content in portable devices. Delivery of high-information content through a small, direct-view display in a portable device, however, presents difficult technological challenges and human interface issues. As portable products become smaller, their direct-view displays also become smaller, limiting the information content and visual experience offered. Small direct-view displays can offer limited types of data, often involve cumbersome navigation, and usually present information only in black and white. Even if these small displays could present more information content, the user would not have the ability to read the small images, reducing the usefulness of such a display. Larger direct-view displays that can present more information and full-screen content, color, and motion consume battery power quickly, do not offer superior image quality, and are relatively costly.

The only available microdisplay technologies targeting portable near-to-eye applications are polysilicon and other transmissive silicon technologies, OLED on silicon, and liquid crystal on silicon. Polysilicon and other transmissive silicon technologies have been unable to deliver resolutions at or above SVGA on a cost-effective basis. OLED on silicon is an immature technology with issues related to lifetime, cost, manufacturability, and image quality.

Liquid Crystal on Silicon Microdisplays

An increasing number of OEMs are evaluating liquid crystal on silicon microdisplays as an alternative to existing technologies in the projector and near-to-eye markets. In the projector markets, liquid crystal on silicon technology offers significant advantages in terms of resolution, image quality, size, and cost, particularly in larger screen sizes, over CRT, polysilicon, and DMD technologies. For high-resolution color near-to-eye applications, liquid crystal on silicon microdisplays appear to be the only commercially available solution.

Today, we and several Japanese OEMs are the only significant liquid crystal on silicon microdisplay providers. The market participation of these large Japanese OEMs, which are incorporating liquid crystal on silicon technology in their own high-end products, is expected to spur the market penetration of liquid crystal on silicon microdisplays. Chinese, Taiwanese, and other non-Japanese manufacturers can be expected to consider sources other than the Japanese OEMs, such as us, for liquid crystal on silicon products.

Stanford Resources projects that the worldwide market for microdisplay components will increase from \$688 million in 2001 to \$1.9 billion in 2007, a compounded annual growth rate of 19%, with more than 44 million units projected to be shipped in 2007.

Strategy

Integrated Systems and Display (ISD) Strategy

Our objective in our ISD division is to establish a global electronic manufacturing and engineering organization that supports our position as a global supplier of display solutions and electronic manufacturing services. In both instances, we are focusing on providing both our display products and manufacturing services to OEMs in high-growth segments of the electronics industry. Key elements of our strategy to achieve these objectives include the following:

Target Strong Customers in High-Growth Industries

We identify and target markets that we believe have the greatest long-term potential for growth. We recognize that our growth and development is closely aligned with the growth and development of the markets we serve. Our display modules and solutions are targeted towards wireless communication, data collection, office automation, medical equipment, and other commercial, consumer, and industrial marketplace products. Our

electronic manufacturing services business targets the automotive, computer/server, medical monitoring, and Internet security markets. Our broad range of products and services enables us to benefit from cross-marketing on a global and market segment basis.

Within each industry, we target companies that we believe would benefit from our design and manufacturing services. Targeted customers include mid-level manufacturing companies whose products require display devices and/or advanced turn-key manufacturing services. Our sales and engineering staffs then attempt to demonstrate the benefits that the potential customer would derive by outsourcing to us the design and production of their products.

Once we establish a relationship with a new customer, we endeavor to develop new programs for other product groups within the customer's business. For this reason, we specifically target customers with multiple divisions or product lines.

Establish Close Relationships with Customers

We seek to establish strong and long-lasting customer relationships through our fundamental business practice, which we refer to as "customer partnering." Customer partnering involves aligning our prospects with those of our customers and seeking to make our engineering and production staff's seamless extensions of the product design and production departments of our customers. This includes our engineers spending a significant portion of their time assisting customers with their own engineering efforts at their facilities. In addition, our customers' engineers sometimes spend time in our facilities.

We stress complete product life-cycle solutions to our customers beginning with early involvement in their product engineering, design, and new product introduction cycles and continuing through manufacturing, testing, logistics and distribution, and aftermarket support services. We view each customer's new product as our own and take pride in creating and implementing innovative engineering solutions that differentiate the customer's product from competitive products. In connection with this philosophy, we have positioned ourselves to provide a rapid response to our customers and their worldwide operations.

To achieve our "customer partnering" goal, we emphasize corporate cultures, customs, and communications that complement those of our customers. A thorough understanding of our customers' products and business goals enables us to anticipate customer needs and to develop new design and production solutions for their products. We embrace diversity as a key element in strengthening our customer relationships.

We continually attempt to enhance the competitive position of our customers by providing them with innovative, distinctive, and high-quality display products and EMS services on a timely and cost-effective basis. To do so, we work continually to improve our productivity, lower our costs, and speed the delivery of our product solutions. We endeavor to streamline the entire design through delivery process by maintaining an ongoing engineering and manufacturing improvement effort.

We continue to provide customer support after product design has been completed and production has been commenced. Through such follow-on activity, we conduct quality enhancement and cost-reduction efforts to maintain the competitiveness of our customers' products.

We intend to continue our efforts to expand our customer base and to provide our customers with additional services. We actively pursue new customers, particularly those in growing and emerging markets that have both volume requirements and require complex solutions. We also evaluate the requirements of our customers and seek to provide them with additional services.

Provide Advanced Custom Design and Manufacturing Services

We seek to design, prototype, and manufacture, on a timely and cost-effective basis, a wide range of innovative, distinctive, and high-quality products, including display modules for operational control and information display functions required in the end products of OEMs. Our design processes utilize world class technology and business processes to provide custom or semi-standard solutions for customers' products in time frames and on cost

bases that we believe are substantially shorter and competitive with industry norms. Our market position and insight enables us to continuously develop unique and difficult-to-replicate solutions.

Until the end of the third quarter of 2001, we operated a highly automated, high-volume LCD manufacturing line in Arizona to produce the majority of our LCDs. In order to enhance cost-effectiveness and take advantage of lower cost manufacturing environments, in the second quarter of 2002, we agreed to sell the manufacturing equipment of our front-end LCD line and entered into a supply agreement with the buyer under which we purchase our LCD glass on a favorable price basis with flexible but assured manufacturing capacity. In addition, we have entered into relationships with manufacturers of color LCDs. Under these relationships, we will custom design the color LCD screens for our customers' unique applications and then outsource the manufacture of these screens. We continue to perform back-end and module manufacturing for those and other products. We utilize advanced, flexible manufacturing systems for high-volume module assembly in Manila and Beijing. We believe our manufacturing facilities provide us with a competitive advantage in meeting the needs of our customers. We will continue to explore the most advanced and cost-efficient production methods for each product solution.

With the purchase of ETMA Corporation in December 2002, we substantially increased our ability to provide electronic manufacturing services from our domestic and Asian facilities, whether or not the products include a display component. This acquisition provides us with global "end-to-end" electronic manufacturing solutions for our OEM customers.

Exceed Customer Requirements through Speed and Efficiency

We emphasize innovative design and manufacturing techniques to improve the speed, efficiency, and performance of our design and manufacturing services. This enables our customers to address the pressure to reduce the lead times for market introduction of their products. As part of our development process, we continually improve and modify our design and manufacturing processes, controls, and methodology in an effort to support our customers' requirements.

Leverage Research and Engineering

We continually strive to research new technologies and utilize technologies of our strategic partners and suppliers in order to provide services and practical product solutions for our customers. We also conduct an active research and development program designed to

- continually improve our products and services and create new products and services;
- increase our efficiency;
- reduce our costs;
- improve the speed, efficiency, and performance of our design and manufacturing services;
- develop new design and manufacturing processes and techniques; and
- enhance the quality, cost-effectiveness, and value of our services.

Pursue Strategic Acquisitions and Alliances

We intend to pursue strategic acquisitions, including OEM manufacturing divestitures, and alliances to expand our customer base, to expand our product and service offerings and geographic presence, to address new markets, to enhance our technological capabilities, or to participate in other growth opportunities.

LCoS Microdisplay Strategy

Provide Value-Added Customer Services

We plan to foster strong and long-lasting customer relationships by providing customers with the most advanced microdisplays for their products. We strive to establish strong and long-lasting customer relationships through "customer partnering." This process involves making our engineering and production staffs seamless extensions of the product design and production departments of our customers, understanding their microdisplay

needs, and designing products to meet those needs, both from a performance and cost point of view. We recognize that our microdisplay products enable our customers to deliver a positive user experience and to differentiate their products from those of their competitors. We attempt to enhance the competitive position of our customers by providing them with high-quality microdisplay products on a timely and cost-effective basis that enable them to increase the functionality, reduce the size, lower the cost, and enhance the user experience of their own products. To do so, we work to improve our productivity, to reduce costs, and to speed the delivery of our microdisplay products. We also devote considerable effort to support our customers after the purchase of our microdisplay products.

Develop Relationships with Leading OEMs

We seek to develop relationships with leading companies in high-growth markets that have the greatest potential for using microdisplays, both immediately and in the future. We are currently targeting various high-growth markets, including large-screen, high-resolution televisions, multimedia and home entertainment projectors, headsets for video games, and mobile wireless communication devices. In addition, we are targeting specialized markets for industrial, medical, and military applications. We believe our strategy of targeting a wide array of applications in both the projector and near-to-eye markets will enable us to enhance our technology, expand our customer base, and achieve efficiencies of scale.

Provide Components, Modules, and Subsystems to Meet Customer Needs

We offer a range of product solutions designed to satisfy varying customer needs in the most efficient manner. For example, certain projector customers demand "plug-and play" light engine systems that can be simply installed as part of their projection systems. Other applications for which we supply subsystem solutions are medical, military, industrial, and consumer applications.

Maintain Our Technological Leadership

We plan to utilize our extensive intellectual property portfolio and technological expertise to provide competitive advantages, extend the functionality of our products, and offer innovative products to our customers across multiple market segments. We intend to continue to develop our technology to increase the performance of our products while reducing their size, weight, cost, and power consumption.

Capitalize on Manufacturing Know-How and Increase Manufacturing Efficiencies

We seek to emphasize our extensive manufacturing know-how. We utilize our advanced manufacturing line at our Tempe facility with its experienced manufacturing team to produce our microdisplay products. We seek to increase our manufacturing efficiencies, yields, and quality to reduce the cost and to speed the delivery of our products. We stress manufacturing processes, widely available quality materials, and standard products and seek to leverage our participation in both the projection and near-to-eye microdisplay markets.

Pursue Strategic Relationships and Acquisitions

We seek strategic relationships to enhance our ability to offer value-added customer solutions, address new markets, gain market share, and maintain technological leadership. We intend to enter into additional strategic relationships with leading companies serving our target markets. We also intend to acquire or make investments in companies that extend our technology and enhance our business and competitive position.

Products and Services

We currently sell both established and leading-edge display products, as well as provide global manufacturing outsourcing solutions for display and non-display related products and LCoS microdisplays.

Display Products

We design and manufacture display modules for use in the end products of OEMs. We seek to provide our customers with high-performance, information-rich, low-power consumption displays that have competitive

advantages in terms of size, cost, and product differentiation. To accomplish this goal, our engineering and development activities focus on display products intended to meet the current and future requirements of our target marketing. We add value for our customers through our ability to integrate the design and production process, which reduces the time between product conception and market introduction. Our emphasis on engineering and manufacturing services has positioned us to develop unique product solutions for our customers as they seek displays with more information content at lower cost.

Our display product solutions provide OEMs with the following benefits:

- access to specialized design and manufacturing technology and expertise;
- accelerated design process and reduced design and manufacturing costs through the use of our specialized personnel, equipment, and facilities;
- reduced reliance on multiple suppliers for components and integration of their production processes; and
- the ability to concentrate their own resources on the design, production, and distribution of their core products.

We have developed a sophisticated design process to meet the specific needs of our customers' applications. Each design project normally involves a cross-functional team of our engineers who are assigned to a customer program. The team consults with the customer's engineers throughout the design, prototype development, and manufacturing process. We continue to supply value-added engineering support after the design solution has been developed and integrated into the manufacturing process in an ongoing effort to provide customers with product performance enhancements and cost-reduction opportunities.

By eliminating the duplication and overlap of investment and resources, we and our OEM customers are able to work together more economically. We concentrate on the development of our display technologies and their applications to products, while our customers devote time and resources on market development for these products.

A manufacturer of a complete system or product requiring a specific type of visual display, such as a mobile handset, medical instrument, business machine, or hand-held data collection device, represents a typical buyer for a display module. For each display module, we work directly with our customer to develop and produce the design and to manufacture the display module in accordance with the customer's specifications. We also provide value-added services by assembling additional components onto the display module, such as keypads, bezels, microphones, speakers, light guides, and optics.

Our historical target market consists of high-end monochrome passive matrix LCD modules of ¼ VGA (320 x 240 pixels) or less resolution, primarily those having smaller than ten-inch diagonal screen sizes. We do not address low-end LCD display markets, such as watches and calculators. In 2001, we added color passive and active matrix LCD technologies for small display product applications. In late 2002, we also added OLED display modules through our strategic partnership with OSRAM Opto Semiconductor.

Through our acquisition of Advanced Video Technologies in the third quarter of 2002, we also design and provide customized and ruggedized, large-sized flat panel, touch screen, and rack mount systems for OEMs. Our offerings include flat panel monitors in a variety of levels of integration from a monitor with an integrated touch screen to a monitor with custom electronic, mechanical, or cosmetic modifications, which will assist customers transitioning from CRTs to flat panel displays. The acquisition enables us to provide customers with complete custom LCD, CRT, and flat panel display solutions.

The difficulties in developing a customer's custom display module include frequently changing customer expectations, evolving customer requirements, and changing customer end-product specifications. These factors result in lengthy lead times for market introduction of customers' products. To overcome the traditional obstacles involved in display design and development, we have developed the four-phase program development process described below. We combine our program development process with our philosophy of being a "seamless extension of our customer." This results in a very flexible, responsive, accurate, and fast development cycle that

enables our customers to introduce their products into the market rapidly. Our program development process consists of the following phases:

- *Feasibility and concept phase.* We work closely with our customer to understand its requirements. Customer input varies from rough sketches to detailed specifications. Experienced display module design engineers work to develop conceptual solutions to customer requirements that include both design and cost parameters.
- *Prototype phase.* We conduct a design review with the customer; complete a proposed design, including the electrical, mechanical, and optical features of the display module; and deliver a prototype to the customer.
- *Pilot phase.* We perform a thorough design review with our customer, involving an analysis of performance, cost, and volume production considerations. A successful pilot phase results in the completion of any design changes, the ordering of the tooling required for production, and the delivery of manufacturing samples.
- *High-volume production phase.* We complete any required changes in the manufacturing process, receive necessary tooling, and commence high-volume production. All high-volume module production takes place in either Manila or Beijing.

We also have developed our own standard products, which we have designed and outsourced through Asian manufacturing companies. In addition, in January 2003, we entered into an agreement with Data International Co., Ltd. of Taiwan. Under that arrangement, we have become the exclusive channel in the Americas for standard custom LCD products manufactured by Data International. As a result of the addition of the product portfolio of Data International, we believe that we are now able to provide a full spectrum of display products and manufacturing services.

Electronic Manufacturing Services

We provide integrated design, manufacturing, and supply chain solutions that address all stages of our customers' product life cycles, including advanced engineering and design, new product introduction and prototyping, global supply chain management, printed circuit board assembly, box build, testing, logistics and distribution, and aftermarket services. We assist our customers in the design and product introduction phases of development to reduce product time-to-market and optimize designs for manufacturing. We obtain competitive component pricing and greater sourcing flexibility for our customers through our supply chain management expertise and our global information systems. We utilize sophisticated assembly and manufacturing techniques in order to provide the complex functionality and small product size that is required by OEMs. We subject our manufactured products to a comprehensive set of tests for quality, functionality, and reliability, including, in most cases, product-specific tests that we often design for our customers. In addition, we assist our customers in packaging and distribution logistics for the final products delivered to their distribution channels or to their end users. We also provide a wide range of aftermarket support, such as repairs, refurbishment, systems upgrades, and spare part manufacturing. By providing these design, engineering, manufacturing, and logistics services, we enable our customers to focus on their core competencies and to enhance their competitiveness by reducing the cost of their products, increasing product performance and functionality, and shortening the time from product conception to product introduction in the marketplace.

We offer a broad range of integrated services that provide customers with total design, new product introduction, and manufacturing solutions to take a product from initial design through production, testing, distribution, and aftermarket support.

Engineering and Design. We offer engineering, design, and related services to assist our customers in designing products for optimal manufacturing and testing. Our design for manufacturability services seeks to achieve defect-free and cost-effective product designs, reduce product development cycles, create high production yields, and establish superior product quality. Our design for testability service focuses on achieving the highest level of in-circuit and functional test coverage prior to product shipment.

New Product Introduction and Prototyping. We offer technical services that shorten the time it takes our customers to introduce their products into the market and that helps them to optimize the commercial manufacturing of their products. Our integrated approach draws on our engineering, design, supply chain management, prototyping and production manufacturing, quality, and test engineering experience to enable a fast, cost-effective ramp to volume production. We are able to assist our customers with component selection, materials strategies, supply chain development, manufacturing process development, reliability modeling, quality plan development, and test plan implementation.

Supply Chain Management. Our global supply chain services include materials, logistics, and storage of materials for the manufacturing of goods and deliveries of those goods to our customers. Our supply chain process starts by choosing suppliers that provide high levels of quality, flexibility, competitive prices, and value added delivery programs, all on a global basis to service those needs. We communicate demand to these suppliers in the most automated process available so that we can meet the needs of our customer for swift reaction to change, maximize our inventory velocity and utilization, and create a valued customer-supplier relationship. We have established with our suppliers various delivery mechanisms from supplier delivery vehicles to consolidated shipping containers. These methods vary based on cost and proximity. These suppliers must also meet ongoing reviews for total cost reduction, flexibility, and quality. Our global supply chain provides value to our customers by increasing flexibility, reducing risk, improving time-to-market, and lowering cost.

Assembly and Manufacturing. We provide turnkey and consigned manufacturing and assembly services. These services include printed circuit board and subsystems assembly, box build, system and subsystem integration, downloading software, and building and configuring the final product.

Product Testing. We offer in-circuit testing of printed circuit boards and functional testing of subsystems and systems, which contributes significantly to our ability to deliver high-quality products on a consistent basis. We work with our customers to develop product-specific test strategies. Our test capabilities include design for test and manufacturing defect analysis, in-circuit development and implementation, and functional tests. We either custom design test equipment and software ourselves or use test equipment and software provided by our customers. In addition, we provide environmental stress tests to assure reliability.

Logistics and Distribution. We offer flexible services related to the configuration and shipment of our customers' products. We perform final product packaging, out-of-box audit, and distribution services for completed products as well as direct order fulfillment. We can deliver final products directly into our customers' distribution channels and to our customers' end-users. We believe that these services compliment our comprehensive manufacturing solutions, enabling our customers to be more responsive to changing market demands and to get their products to market more quickly with less total cost.

Aftermarket Service. We provide a wide range of aftermarket services, including repair, refurbishment, remanufacturing, system upgrades, and spare part manufacturing. These services are supported by specific information systems and testing technologies and can be tailored to meet specific customer requirements.

LCoS Microdisplays

Introduction

We develop, manufacture, and market microdisplay products and system solutions utilizing our liquid crystal on silicon, or LCoS, microdisplay technology for a variety of markets. These markets include rear-projector high-definition televisions; front-projector multimedia and home theater projectors; and "near-to-eye" or personal display applications, including head-mounted monocular or binocular headsets or viewers for industrial, medical, military, commercial, and consumer applications. Our LCoS microdisplays consist of a CMOS backplane, liquid crystal layer, and glass packaged for connectivity using highly advanced packaging technologies.

The display market continually demands greater information content at reduced prices. We believe that the inherent capability of our LCoS technology provides a cost-effective solution to increased information demands. Our LCoS technology provides high-information content in a small size and at a low cost. As a result, we believe our microdisplay products and system solutions address market trends in those market segments that demand high-information, high-resolution, power-efficient displays with increasing functionality and smaller sizes at low costs.

There are various types of microdisplay technologies. Liquid crystal on silicon microdisplays are a form of active matrix LCD in which liquid crystalline material is suspended between a glass plate and a silicon backplane rather than between two glass plates. The silicon backplane, which is essentially an integrated circuit, provides drive signals for each pixel element of the display as well as logic functions, such as serial to parallel conversion and data storage. Because CMOS integrated circuits, which is a highly developed technology, form the basis of these displays, liquid crystal on silicon technology permits a very high-information content, high-performance display in a small size and at a relatively low cost.

Product Line

Our microdisplay products include a line of LCoS display imagers and associated application specific integrated circuits, or ASICs, optical modules, and proprietary light engines and reference designs. Our imager products have resolutions and sizes designed for specific market segment applications. The following table sets forth certain information regarding our currently available imagers and our BR1920 imager currently in development.

<u>Model Number</u>	<u>Resolution</u>	<u>Size</u>	<u>Applications</u>
Z86D-3	SVGA	0.47"	Near-to-eye
BR1024	XGA	0.53"	Rear-projection television (4:3 aspect ratio)
BR768	HDTV1	0.70"	Rear-projection television (16:9 aspect ratio)
BR1280	SXGA	0.78"	Front projectors and photo printers
BR1920	WUXGA and HDTV2	0.85"	Rear-projection full high-definition television and other high-performance video applications

In association with the display imagers listed in the table above, we sell a line of ASICs that provide driver, controller, and converter functions in order to deliver a complete imager solution. In addition, our product line includes optical modules and "light engines" that incorporate illumination, prisms, color separators and combiners, and lenses to provide complete display solutions. We sell these complete display solutions as modules for near-to-eye applications and proprietary "light engines" for projector applications. Our microdisplay light engines also allow us to meet the different price points, development times, and resolution requirements for a variety of customer applications. The small microdisplays and precision optics included in our light engines separate light into its three primary colors and then recombine that light to produce brilliantly sharp images that cannot be accurately reproduced by traditional display technology. Our products include development kits and reference designs in order to accelerate time to market for our customers.

Projector Applications

We serve several projection markets: the rear-projection, high-definition television market with screen sizes of between 50 and 65 inches and the high-end multimedia and home theater front-projection markets. Additionally, we serve several smaller projection markets, including photo printer, digital cinema, and specialty military applications.

For projection applications, we offer products with XGA, SXGA, and HDTV1 resolution and are developing products with HDTV2 resolution. We believe our LCoS microdisplays have significant advantages over competing technologies in the consumer marketplace in terms of resolution, image quality, size, and cost as well as in terms of manufacturability. In rear-projection televisions, our light engines containing our LCoS microdisplays replace the image-related components in a traditional rear-projection CRT television at approximately one-third the weight and size, while providing better image quality and much higher resolution.

Near-to-Eye Applications

We produce products to serve the near-to-eye market, including SVGA imagers, display modules, and reference designs. Our display modules are complete drop-in assemblies that allow customers to focus on end-product design and packaging, because they can use our full color SVGA resolution microdisplay as a drop-in assembly.

Our near-to-eye products utilize a viewfinder, typically mounted in a headset, and provide image magnification. The image appears to the user with the clarity, size, and resolution of a computer monitor. These products also are compact, lightweight, and highly energy efficient. With high resolution and small size, LCoS microdisplays offer unique advantages to these wearable and portable products. Products based on LCoS microdisplays have long lifetimes and can be made lightweight with low power requirements and display sharp, bright images. Our LCoS microdisplays also withstand wide ambient temperature ranges, a feature which is important for industrial and portable applications. In addition, our associated ASICs enable fast rendering of images, an important attribute for viewing full-motion video.

To date, our near-to-eye product sales have been concentrated in specific industrial, medical, and military applications. Product shipments have included LCoS microdisplays for monocular and binocular headmounted displays, video telescopes, surgical microscopes, and riflescopes.

We are developing microdisplays for use in headsets for video games. These microdisplay headset products are designed to provide users with an enhanced video game experience. Like a joystick, our microdisplay headset products will allow users new dimensions of interface with the games and a greater immersion into the game.

We also are pursuing the development of microdisplay-based monocular or binocular displays for use in various high-information content portable electronic devices, such as mobile handsets, pagers, PDAs, and wireless Internet appliances. Use of microdisplays in these personal display system applications will enable users to view the information delivered by the device at the same resolution as a desktop or notebook computer.

Another emerging market for LCoS microdisplays is mini-projectors for use with PDAs, notebook computers, and other portable electronics. These mini-projectors beam images onto walls, tabletops, or other surfaces for use by individuals or small groups. Mini-projectors can allow new dimensions to be added to users' information manipulation and sharing capabilities. Any surface can be turned into a virtual computer monitor using a mini-projector. This small and seemingly simple accessory can turn computers, PDAs, and cell phones into more versatile mobile offices.

Other Business Factors

Sales and Marketing

We approach sales and marketing on three levels: engineer to engineer, salesperson to procurement, and factory to factory. Our approach is to treat an existing program as a marketing platform for the next program. Our engineering, marketing, and sales groups provide ongoing services to our customers throughout the life of product programs. These services include implementing continuous improvement tools related to both the product's cost and technical performance. This service function allows us to market future sales within our customer base.

We market our services primarily in North America, Asia, and Europe through a direct technical sales force resident in those areas. We also have established an extensive network of representatives selling our display solutions products throughout the world. A staff of in-house, Arizona-based engineering personnel directs and aids all sales personnel.

Our sales to customers in North America represented approximately 16.8% of net sales in 2001 and 14.9% of net sales in 2002. Our sales to customers in China represented approximately 40.6% of net sales in 2001 and 39.7% of net sales in 2002. Our sales to customers in other foreign countries represented approximately 42.6% of net sales in 2001 and 45.4% of net sales in 2002.

Customers

Historically, Motorola has been our largest customer. Sales to Motorola, including its subcontractors, accounted for approximately 85.4% of our net sales in 2001 and 76.9% of our net sales in 2002. No customer other than Motorola accounted for more than 10.0% of our net sales in 2001 or 2002. Substantially all of the net sales for Motorola programs in 2001 and 2002 were for mobile handset applications. In 2002, we refocused our strategy on lower volume programs with higher gross margins. As a result, in 2001 and 2002, we received no design wins at Motorola for mobile handset applications. Instead, our design wins with Motorola were in other low-volume applications, such as telematics, which are cellular applications in automobiles. Based on the recent absence of design wins and anticipated ranges of purchases indicated by Motorola, we anticipate that purchases by Motorola from us will be substantially less than prior levels. See Item 1 "Business - Risk Factors - We anticipate significantly lower business volume from our historically largest customer." In fact, we expect that Motorola will comprise less than 10% of our revenue in 2003.

In the past, our strategy in our LCD display business involved concentrating our efforts on providing design and production services to leading companies in mobile handsets and other wireless communication, data collection, office automation, medical equipment, and other commercial and consumer marketplaces. As a result, a significant portion of our net display sales has resulted from services provided to a limited number of customers. We have added an extensive standard product line with our acquisition of AVT and our arrangement with Data International. In addition, we are developing our own line of standard color display products. Therefore, as we have focused more on niche applications with higher selling prices and lower volumes, the breadth of our customer base has increased.

Customers for our electronic manufacturing services include large multinational and smaller OEMs that have chosen outsourcing as a core manufacturing strategy. We maintain relationships with OEMs in a diverse range of industries, including automotive, computer/server, medical monitoring, and Internet security. We believe we are able to offer these customers an outsourcing solution that involves lower costs than typically would be provided by their internal operations. We seek to differentiate ourselves from our competitors by providing advanced methodologies and capabilities and exceptional customer focus by integrating our services into our customers' operations. During 2002, we served more than 15 EMS customers.

We believe that there will be substantial synergy between our display products group and our EMS group, providing us with a unique value proposition for our target markets. The printed circuit board assembly and the display represent a large portion of an OEM's bill of materials, thus allowing us to offer "one-stop shopping."

Backlog

As of December 31, 2002, we had a backlog of orders of approximately \$32.0 million. The backlog of orders as of December 31, 2001 was approximately \$18.7 million. Our backlog consists of product orders for which confirmed purchase orders have been received and which are scheduled for shipment within 12 months. Orders are now given with only a six to eight week lead time. Most orders are subject to rescheduling or cancellation by the customer with limited penalties. Because of the possibility of customer changes in delivery schedules or cancellations and potential delays in product shipments, our backlog as of a particular date may not be indicative of net sales for any succeeding period.

Manufacturing Services, Facilities, and Quality Control

Manufacturing Services

We have organized our manufacturing geographically to optimize the combination of technology and labor factors. This organization enables us to compete solely on the basis of cost, if necessary, with suppliers of similar products and services throughout the world to the extent we determine to do so based on profitability levels. Our advanced manufacturing techniques include surface mount technologies, automated printed circuit board assembly, end circuit and functional testing, systems integration and box-build, chip-on-board, chip-on-flex, chip-on-glass, flip-chip, tape automated bonding, and sophisticated testing systems throughout these processes.

We seek to increase our value to our customers by providing responsive, flexible, total manufacturing services. To date, our manufacturing services have been concentrated on the manufacture of LCDs and assembly of

display modules that we have designed. We provide extended manufacturing services beyond these core services, however, if the customer requires them. Extended services may include adding additional components, such as keypads, microphones, speakers, light guides, and optics, or the turnkey manufacture of a complete assembly. In addition, we recently acquired ETMA Corporation, which provides us additional manufacturing capabilities for products beyond display modules. Specifically, ETMA provides engineering support, automated printed circuit board assembly, end circuit and functional testing, systems integration and box build, complete supply chain management, and turn-key packaging and fulfillment services.

Manufacturing Facilities

We currently conduct manufacturing operations in Tempe, Arizona; Redmond, Washington; Marlboro, Massachusetts; Manila, the Philippines; and Beijing, China.

Our dedicated LCoS microdisplay production line is at our Arizona facility. The facility consists of 16,000 square feet of Class 100, 1000, and 10,000 clean room areas where wafer scale LCoS processing, core assembly, packaging, and automated testing is preformed. We perform all manufacturing, packaging, and module assembly for LCoS products at our Arizona facility. Facility personnel include a team of experts ranging from research scientists to specialized engineers with backgrounds in electronics, mechanics, chemistry, physics, and manufacturing. We maintain a wide variety of state-of-the-art testing and quality control equipment at the facility.

The Arizona facility previously housed a fully automated LCD production facility. We utilized this facility to manufacture high-volume LCD glass panels and to conduct LCD research and development, to produce prototype and pre-production runs of devices for customer approval, to conduct full production runs of low-volume devices, and to develop advanced manufacturing processes that could be applied in Manila and Beijing during full-scale production. In 2001, we decided to shut down and move our front-end manufacturing LCD line from Arizona to Asia. We now purchase all of our LCDs from third parties although we sometimes purchase partially completed LCDs and complete the back-end operations on those LCDs in Manila. During 2002, we entered into a Cooperative Agreement with a China-based company. Under the agreement, we sold the equipment of our front-end LCD line and established a supply arrangement, providing for favorable LCD glass pricing and flexible yet assured manufacturing capacity.

We provide aftermarket customization of CRT and LCD monitors in Marlboro, Massachusetts. We operate state-of-the-art manufacturing facilities in Redmond, Washington, Manila, and Beijing. In Manila and Beijing, we assemble displays into modules and perform certain back-end LCD processing operations. In Redmond, Washington, we provide engineering support, automated printed circuit board assembly, in-circuit and functional testing, systems integration and box build, complete supply chain management, and turn-key packaging and fulfillment services.

Our Manila operations are housed in a custom-designed, built-to-suit manufacturing facility in the Camelray Industrial Park near Manila in the Philippines. The term of this lease for the factory in Manila is 125 months. This new 65,000 square foot manufacturing and design facility incorporates state-of-the-art manufacturing equipment and a class 10,000 cleanroom environment. This new facility is focused on module manufacturing and is staffed entirely with direct labor employed by us. In addition, the new manufacturing facility has been outfitted with specific tooling and equipment unique to our manufacturing needs. The new facility is located in a special Philippines economic zone (PEZA), which allows us to take advantage of certain tax benefits. Prior to opening our own facility in Manila, we operated certain back-end LCD functions pursuant to a sub-assembly agreement with Technology Electronic Assembly and Management Pacific Corporation, or TEAM. Those services were performed in TEAM's buildings, but all functions were transferred to our Camelray facility in 2002.

Our Beijing facility is a high-volume display module manufacturing facility similar to our facility in Manila. We own the manufacturing facility in Beijing, which we completed in 1999, and all of the equipment in that facility. In addition, we employ all of the direct and indirect manufacturing employees at the facility, including technicians, supervisors, and engineers.

Our Redmond, Washington facility is a lower-to-medium volume, medium-to-high mix manufacturing facility focusing on electronic manufacturing services. We lease this facility, and the remaining term of the lease is for 60 months. We also lease two additional facilities in Redmond, Washington. One facility is used for final

product assembly (box build) and logistics operations and that facility has a remaining lease term of 37 months. The third facility is used for rework, repair and storage with 46 months remaining on its lease.

Quality Control

We recognize the need to maintain a strong reputation for quality as a means of retaining existing customers and securing additional orders from them as well as attracting new customers. We have an extensive quality control program and maintain at each of our facilities quality systems and processes that meet or exceed the demanding standards set by many leading OEMs in our targeted industries. We base our quality control program upon statistical process control, which advocates continual quantitative measurements of crucial parameters and uses those measurements in a closed-loop feedback system to control the manufacturing process. We perform product life testing to help ensure long-term product reliability. We analyze results of product life tests and take actions to refine the manufacturing process or enhance the product design.

Increased global competition has led to increased customer expectations with respect to price, delivery, and quality. Customers often evaluate price in the quotation process and evaluate delivery and quality only after receiving the product. Therefore, many customers preview a company's quality by viewing the quality systems employed. We have received ISO 9001 and QS 9000 certifications of our Manila manufacturing facility and ISO 9001 certification of our manufacturing facility and corporate headquarters in Tempe, Arizona. Our Redmond facility is ISO 9002 certified. ISO and QS are quality standards established by international organizations that attempt to ensure that the processes used in development and production remain consistent. This is accomplished through documentation maintenance, training, and management review of the processes used. Although achieving an ISO or QS certification does not assure that we will obtain future business, it is a factor that enables our customers to recognize that our production processes meet these established, global standards of performance.

Components and Raw Materials

Components and raw materials constitute a substantial portion of our product costs. The principal components and raw materials we use in producing our display products consist of LCD glass, silicon wafers (for LCoS microdisplays), application specific integrated circuits, or ASICs, printed circuit boards, molded plastic parts, lead frames, and packaging materials. Our procurement strategy is to secure alternative sources of supplies for the majority of these materials. Many of these materials, however, must be obtained from foreign suppliers, which subjects us to the risks inherent in obtaining materials from foreign sources, including supply interruptions and currency fluctuations. Our suppliers generally are meeting our requirements, and we believe our strategic supplier alliances have further strengthened our relations with offshore suppliers. We experienced material shortages of ASICs in 1999 and 2000 as a result of the increased worldwide demand for cellular handsets and as a result of supplier issues encountered in the fourth quarter of 2000. These shortages prevented us from meeting customer demand for certain of our products. Similar shortages in the future could have a material adverse effect on our business.

In providing electronic manufacturing services, we also purchase various electronic components, including printed circuit boards, ASICs, semiconductors, interconnect products, memory modules, power supply modules, cable and wire harnesses, resistors, and capacitors as well as components for use in assembly and manufacturing, including injection-molded plastic, pressure-forward plastics, vacuum-formed plastics, sheet metal fabrication, aluminum extrusions, die castings, and various other hardware and fastener components. Some of these components and raw materials are standard and others are highly customized and they vary widely in terms of market availability, volatility, and price.

We attempt to procure components and other raw materials only when a purchase order or forecast is received from a customer. We experience component shortages and longer lead times for various components and raw materials from time to time. We generally have been able to reduce the impact of shortages by working with customers to reschedule deliveries and by working with suppliers to provide the needed components using just-in-time vendor managed or consigned inventory programs.

Research, Development, and Engineering

We conduct an active and ongoing research, development, and engineering program that focuses on advancing technology, developing improved design and manufacturing processes, and improving the overall quality of the products and services that we provide. Our goal is to provide our customers with new solutions that address their needs. Research and development personnel concentrate on improving the performance of current products and expanding the technology to serve new markets. We also conduct research and development in manufacturing processes, including those associated with efficient, high-volume production and electronic packaging.

We have also undertaken a significant research and development program and made substantial investments with respect to the development of our *LCoS* microdisplays. The majority of our available research and development personnel hours was dedicated to *LCoS* microdisplays in 2001 and 2002, and we expect that to continue in 2003.

Intellectual Property

We rely on a variety of intellectual property methods, including patents, trade secrets, trademarks, confidentiality agreements, licensing agreements, and other forms of contractual provisions, to protect and advance our intellectual property. Although our existing LCD display business has not historically depended on intellectual property protection, we are strongly focused on our *LCoS* intellectual property rights:

- We have filed numerous patents relating to our *LCoS* microdisplay technology. These patents cover the areas of product design and manufacturing process technology. We have a strong emphasis in this area and expect to continue to file additional disclosures. We have over 300 patents issued, filed, or disclosed. There can be no assurance that any patent applications will be issued to us.
- In July 1999, we purchased the assets, including all production and test equipment, specialized laboratory equipment, and supporting design documentation and software, of the former Light Valve business unit of National Semiconductor. We also hired several key scientists of that business unit and acquired an exclusive, paid-up, royalty free license on all of the patents and intellectual property related to that business unit. This license covers all intellectual property relating to the processing, packaging, and testing of light valves and the integrated circuits necessary to manufacture and sell both light valves and light engines.
- In August 1999, we licensed the microdisplay technology of S-Vision Corporation, a former microdisplay competitor that had recently ceased operations. Under this agreement, we acquired an irrevocable, royalty free, fully paid-up, worldwide license to the intellectual property associated with S-Vision's digital backplane and optical systems, which provides us rights to manufacture certain microdisplay products and patented optical engines. In addition, S-Vision assigned to us a patent relating to the design and manufacture of microdisplay products.
- In January 2002, we purchased all of the intellectual property of Zight Corporation, a private company that focused on microdisplays for personal display system applications. In addition, we purchased certain key assets of Zight's at a creditor's auction and hired seven key technical persons formerly employed by Zight.
- In April 2002, we purchased all of the intellectual property of Inviso Corporation, a private company that also focused on microdisplays for personal display system applications.
- In January 2003, we were awarded a registered trademark on "*LCoS*."

Competition

We believe that Philips, Samsung, Seiko-Epson, Hosiden, Optrex, Seiko Instruments, Wintek, and Sharp constitute the principal competitors for our display products and solutions. Most of these competitors are large companies that have greater financial, technical, marketing, manufacturing, vertical integration, and personnel resources than we possess. Our sales, profitability, and success depend substantially upon our ability to compete with other providers of display modules. We cannot provide assurance that we will continue to be able to compete successfully with these organizations. We currently compete principally on the basis of the technical innovation, engineering service, and performance of our display modules, including their ease of use and reliability, as well as on their cost, timely design, and manufacturing and delivery schedules. Our competitive position could be adversely affected if one or more of our customers determines to design and manufacture their display modules internally or secures them from other parties.

We believe Benchmark Electronics, Plexus, Pemstar, SMTC Manufacturers' Services, and other smaller, proximity-based domestic EMS providers constitute our principal competitors in supplying electronic manufacturing services. We compete primarily on the basis of engineering, testing, and production capabilities; technological know-how; the responsiveness, quality, flexibility, and price of our services; and geographical location. Many of our competitors have substantially greater manufacturing, financial, and research and development resources than we possess and offer broader geographic operations and a greater range of services than we do. We also face competition from the manufacturing operations of current and potential customers, which continually evaluate the benefits of internal manufacturing versus outsourcing.

We believe that Texas Instruments, JVC, Hitachi, Aurora Systems, SpatiaLight, Epson, and Sony constitute the principal competitors for our microdisplay products. Texas Instruments has developed a product, referred to as a DMD microdisplay, that competes with our LCoS technology. JVC, Hitachi, Aurora, and SpatiaLight are developing or producing liquid crystal on silicon displays that are similar to our LCoS display based on their own technology. Epson and Sony manufacture transmissive polysilicon, which is a type of microdisplay that can be used in some of the same applications as LCoS microdisplays. Numerous other established and start-up companies are also pursuing similar and related technologies that may compete with our LCoS technology.

Our competitive position in our microdisplay business results from broad liquid crystal on silicon capabilities, mature technologies, high-volume manufacturing, financial strength, and current customer relationships. Based on these factors, we believe we are the only full-service independent choice for OEMs that wish to use liquid crystal on silicon in the projector and near-to-eye markets.

Strategic Acquisitions, Investments, and Alliances

In 1997, we entered into a strategic alliance with National Semiconductor Corporation for the development of LCoS microdisplay products. Under that alliance, National Semiconductor focused on the silicon technologies needed for microdisplays, and we focused on the liquid crystal technologies. In 1999, National Semiconductor decided to close its microdisplay business unit. In connection with that closing, in July 1999, we purchased certain assets and licensed silicon technologies from National Semiconductor relating to LCoS microdisplays. We paid approximately \$3.0 million in cash and issued warrants to purchase 140,000 shares of our common stock in the transaction, which valued the transaction at approximately \$3.6 million. No additional payments are required under the licenses. We also hired several key technical employees of National Semiconductor to assist in the implementation of the acquired technologies.

In April 1998, we entered into a strategic relationship with Inviso, Inc., a privately held company with numerous patents and proprietary technology related to microdisplay development. We acquired a minority equity interest in Inviso for approximately \$3.3 million. In March 2000, we acquired an additional interest in Inviso for \$500,000, raising our total minority equity interest to \$3.8 million. As part of this strategic relationship, we provided proprietary manufacturing capabilities and liquid crystal expertise, and Inviso provided patented and proprietary technologies and components for the joint development of microdisplay products. In the second quarter of 2001, we wrote off our investment of \$3.8 million in Inviso because we determined that our investment was impaired, as that term is defined under generally accepted accounting principles. Subsequent to our write-off, Inviso

was unable to raise funds to operate its business and ceased operations. A total of \$780,000 was spent in 2002 obtaining all of the intellectual property of Inviso.

In August 2000, our wholly owned subsidiary, Three-Five Systems (Beijing) Co., Ltd., entered into a strategic agreement with Heibei Jiya Electronics, Co., Ltd. ("Jiya"), a Chinese-based manufacturer of LCD glass. Under the terms of the agreement, Jiya agreed to provide LCD glass to us and reserve a significant amount of LCD glass manufacturing capacity for us. In exchange, we agreed to assist Jiya in further developing its LCD glass manufacturing processes. At the end of the agreement term in February 2002, we had the option to extend the agreement or to acquire a majority interest in Jiya. We elected not to extend the agreement or acquire a majority interest.

In 2001, we invested \$1.25 million in Silicon Bandwidth, Inc., a privately held company providing unique semiconductor and optoelectronic interconnect solutions based upon multiple, patented, proprietary technologies. We are working closely with Silicon Bandwidth to design unique, cost-effective, reconfigurable packaging platforms for LCoS microdisplays.

During the second quarter of 2001, we formed a new company, Three-D OLED L.L.C., with Dupont Displays, a business unit of Dupont Corporation. We owned 51% of this new venture, and Dupont Displays owned 49%. The companies pledged \$3.0 million to the venture. Our share of that obligation was slightly over \$1.5 million. This venture was formed to design, assemble, and market organic light emitting diode, or OLED, display modules to OEMs worldwide with the focus on glass substrate, passive matrix OLED displays. In the second quarter of 2002, we agreed with Dupont Displays to liquidate our joint venture with Three-D OLED L.L.C. and enter into a non-equity based Strategic Manufacturing and Supply Agreement. Under that agreement, the parties will continue to work together in a fashion similar to the venture, but the relationship will be nonexclusive. We have not worked with Dupont since the liquidation.

In January 2002, we purchased the intellectual property of Zight Corporation, a private company focused on microdisplays for personal display system applications. In addition, we purchased certain key assets of Zight at a creditor's auction, and we hired seven key technical persons formerly employed by Zight. The total purchase price was approximately \$2.6 million, of which approximately \$2.0 million was related to intangibles.

In January 2002, we entered into an agreement with China Display Digital Image Technology (Shanghai) Co., Ltd. Under the arrangement, China Display will develop high-performance light engines using our microdisplays.

In July 2002, we invested \$5.0 million in ColorLink, Inc. ColorLink has a leading position worldwide in the development and manufacture of color management technologies for LCoS microdisplays. ColorLink's products consist of color management components and system architectures that are critical for digital projection systems that use high-resolution microdisplays. Those projection systems include color monitors, high-definition televisions, and multi-media projectors. This investment furthers our efforts to accelerate as much as possible the establishment of the necessary infrastructure for LCoS microdisplays. An additional \$81,000 was recorded as investment in ColorLink during the third quarter of 2002 for legal and due diligence expenses.

In July 2002, we entered into an agreement with Advanced Digital Optics, Inc., or ADO, a company that specializes in the design and development of light engines used in projection displays. Under the agreement, we are working with ADO to develop light engines for use in rear-projection televisions.

In August 2002, we entered into an agreement with Accupix, Inc. The arrangement provides for Accupix to provide optical module designs as well as local optics and electronics support for our customers developing near-to-eye microdisplay applications.

In September 2002, we entered into an agreement with Visual Interaction GmbH. Under the arrangement, Visual Interaction will provide local optics and electronic support for the European market and offer module reference designs for our customers developing near-to-eye microdisplay applications.

In September 2002, we purchased the assets and ongoing business of Advanced Video Technologies (AVT), a privately held company that specializes in the design and integration of complex, high-resolution display

systems. AVT designs and provides customized and ruggedized flat panel, touchscreen, and rackmount systems for OEMs, including General Electric, Westinghouse, Gillette, and the U.S. military. AVT sources its display components from a variety of companies including Sony, Sharp, NEC, LG, and Samsung. The purchase price of the acquisition was \$12.0 million, which we paid entirely in cash. The purchase agreement also calls for a residual purchase payment of \$2.0 million should the AVT division achieve certain revenue and profit objectives for 2002 and 2003.

In November 2002, we entered into a marketing and technology agreement with Duraswitch. Under the arrangement, we will make our display system services, products, and manufacturing services, including training and sales support, available to Duraswitch's OEM customers in the appliance, computer, and medical markets, and Duraswitch will provide us with training, engineering, and marketing support in bringing its patented switch technologies to our customers.

In December 2002, we purchased the stock of ETMA Corporation, a privately held electronic services manufacturer for OEM customers in the automotive, computer/server, medical monitoring, and Internet security industries. ETMA offers the manufacturing capabilities of six surface mount manufacturing lines, including one dedicated to new product introduction and prototyping activity. ETMA provides engineering support, automated printed circuit board assembly, in-circuit and functional testing, systems integration and box build, complete supply chain management, and turnkey packaging and fulfillment services. The purchase price of the acquisition was \$38.1 million, which we paid entirely in cash.

In December 2002, we entered into an arrangement with OSRAM Opto Semiconductors GmbH to collaborate in the design and marketing of OLED display products. Under the strategic alliance we will provide design and engineering services to support the integration of OSRAM's technologies and product configuration into customer products and have the ability to market OSRAM's standard OLED display products through our market channels.

In January 2003, we signed licensing and manufacturing agreements with Data International Co., Ltd. of Taiwan. Under those agreements, we will become the exclusive sales channel in North and South America for standard and custom LCD products manufactured by Data International. We will also have the right to sell those products through its worldwide channels. The agreements provide us with access to a full suite of standard display products that will round out our existing standard product portfolio. In conjunction with the agreement, we established a sales office in Orlando and hired sales and applications engineering personnel who have supported Data International's products throughout North and South America for the past ten years. The cost of the license is anticipated to be \$4.0, of which \$1.0 million was paid upon signing with the remaining \$3.0 million due over the next two years. The unpaid \$3.0 million is subject to reduction if certain revenue and margin targets are not met.

Government Regulation

Our operations are subject to certain federal, state, and local regulatory requirements relating to environmental, waste management, health, and safety matters. We believe we operate in substantial compliance with all applicable requirements. There can be no assurance, however, that material costs and liabilities will not arise from complying with these or from complying with new, modified, or more stringent requirements. In addition, our past, current, or future operations may give rise to claims of exposure by employees or the public or to other claims or liabilities relating to environmental, waste management, or health and safety concerns.

Our operations create a small amount of hazardous waste, including various epoxies, gases, inks, solvents, and other wastes. The amount of hazardous waste we produce may increase in the future depending on changes in our operations. The general issue of the disposal of hazardous waste has received increasing focus from federal, state, local, and international governments and agencies and has been subject to increasing regulation.

In 1991, we received a notice of potential liability at the Barkhamsted-New Hartford Landfill Site (the "Landfill") in Barkhamsted, Connecticut from the United States Environmental Protection Agency ("EPA"). Fifty-seven other entities received similar letters. In January 1992, we received a 104(e) questionnaire from the EPA which was completed and submitted during 1992. We received verbal notification that we had no further liability in the matter. According to the EPA, groundwater contamination at the site, which includes volatile and semi-volatile organic compounds and low concentrations of metals, constitutes a low-level threat. As a result of previous actions

at the site, groundwater is the only medium requiring additional cleanup. All source material and principal threats have been addressed through the landfill capping and related activity completed in 1999. On February 28, 2002, we received notification from the EPA that the EPA believes we were an involved party and indicated that the EPA was seeking to negotiate an agreement with the involved parties to fund the EPA's chosen remedy of monitored natural attenuation of the groundwater. We have reached a settlement on that matter for \$65,000 and have no further liability with respect to this issue.

Employees

As of December 31, 2002, we employed a total of 1,354 persons, including 32 in finance, accounting, and administration; 30 in sales and marketing; 1,221 in manufacturing and assembly; and 71 in research, development and engineering. Of our employees, 158 were employees at our principal U.S. facility in Arizona and U.S. sales offices; 15 were employees at our manufacturing facility in Marlboro, Massachusetts; 12 were employees at our R&D facility in Boulder, Colorado; 187 were employees at our manufacturing facility in Redmond, Washington; 498 were employees at our manufacturing facility in Manila; 479 were employees at our manufacturing facility in Beijing; and five were employees at our Three-Five Systems Limited subsidiary in Swindon, England. We consider our relationship with our employees to be good, and none of our employees currently are represented by a union in collective bargaining with us.

Executive Officers

The following table sets forth certain information regarding our executive officers:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Jack L. Saltich.....	59	President, Chief Executive Officer, and Director
Jeffrey D. Buchanan	47	Executive Vice President, Chief Financial Officer, Secretary, Treasurer, and Director
Carl E. Derrington	52	Vice President, Chief Manufacturing Officer
Robert L. Melcher.....	63	Chief Technology Officer
Van H. Potter	44	Vice President-Display Products

Jack L. Saltich has served as a director and the President and Chief Executive Officer of our company since July 1999. Mr. Saltich served as Vice President of Advanced Micro Devices from May 1993 until July 1999; as Executive Vice President of Applied Micro Circuits Corp. from January 1991 until March 1993; and as Vice President of VLSI from July 1988 until January 1991. Mr. Saltich held a variety of executive positions for Motorola from July 1971 until June 1988. These positions included serving as an Engineering Manager from May 1974 until January 1980, an Operation Manager from January 1980 until May 1982, a Vice President and Director of the Bipolar Technology Center from May 1982 until June 1986, and a Vice President and Director of the Advanced Product Research and Development Laboratory from June 1986 until June 1988.

Jeffrey D. Buchanan has served as a director and Executive Vice President of our company since June 1998; as Chief Financial Officer and Treasurer since June 1996; and as Secretary since May 1996. Mr. Buchanan served as our Vice President – Finance, Administration, and Legal from June 1996 until July 1998 and as our Vice President – Legal and Administration from May 1996 to June 1996. Mr. Buchanan served from June 1986 until May 1996 as a business lawyer with O'Connor, Cavanagh, Anderson, Killingsworth & Beshears. Mr. Buchanan was associated with the international law firm of Davis Wright Tremaine from 1984 to 1986, and he was a senior staff person at Deloitte & Touche from 1982 to 1984.

Carl E. Derrington has served as our Chief Manufacturing Officer since May 1999. Dr. Derrington joined our company in 1986 as a Director of Research and Development. Since that time, Dr. Derrington has served as a Plant Manager from January 1986 until September 1987, a Director of Engineering from September 1987 until

August 1989, a Director of Manufacturing from August 1989 until April 1996, and a Director of Manufacturing Engineering from April 1996 until April 1999.

Robert L. Melcher has served as our Chief Technology Officer since October 1999. Prior to joining our company, Dr. Melcher was employed at IBM in a variety of management positions from 1970 until October 1999. He served as the Program Leader for Projection Displays from 1993 to 1999 and immediately prior to that he was Director of the Physical Sciences Department from 1990 to 1993.

Van H. Potter has served as Vice President-Display Products since February 2003. Mr. Potter was Market Development Manager and Project Manager for Rogers Corporation, a manufacturer of specialty polymer composite materials, from February 2002 until February 2003. From April 1994 until February 2002, Mr. Potter held a variety of management, marketing, and new business development positions with Durel Corp., a joint venture between Rogers Corporation and 3M Corporation.

RISK FACTORS

You should carefully consider the following factors, in addition to those discussed elsewhere in this report, in evaluating our company and our business.

We anticipate substantially lower business volume from our historically largest customer.

Motorola, including its subcontractors, has been our largest customer during each of the last seven years. Sales of Motorola products accounted for approximately 76.9% of our net sales in 2002, 85.4% in 2001, 86.9% in 2000, 86.1% in 1999, and 63.6% in 1998. Substantially all of our sales of Motorola products were for mobile handset applications. A significant decline in sales to Motorola is expected to occur in 2003 primarily as a result of our receiving no new design wins in 2001 or 2002 for Motorola's handset business. In the fourth quarter of 2002, our Motorola revenue accounted for only 55% of our business. We expect our Motorola business to account for less than 20% of our business in the first quarter of 2003, and less than 10% of our revenue in the second quarter of 2003.

Our revenue from LCD products may decline significantly in 2003.

The years 2001 and 2002 were characterized by a worldwide lack of growth in the handset market and excess LCD capacity. As a result, some OEMs expected custom LCD modules used in low-end handsets to be sold below industry costs. We made the strategic decision, however, not to sell our custom LCD products below standard industry costs. Instead, we are focusing on lower-volume, higher-priced LCD products that utilize our advanced technologies and engineering services. As a result of our strategic decision, however, our volume of unit shipments and, consequently, our revenue from LCD products, have declined and may continue to decline significantly.

We recently entered the electronic manufacturing services business.

We recently entered the electronic manufacturing services business through our acquisition of ETMA Corporation. Among other things, we will be required to integrate the operations of that company with our high-volume manufacturing operations in Manila and Beijing.

We are in the process of substantially expanding our electronic manufacturing services, which will result in various risks, including the following:

- the integration of worldwide operations;
- the ability to procure and install necessary additional equipment;
- the ability to hire, train, and manage additional manufacturing personnel;
- production delays, unfavorable manufacturing yields, and lengthening delivery schedules;
- the ability to service widespread customers in varied industries;
- the need to satisfy increasingly rapid product turnaround time and rapid increases in production levels;
- the volume of customer orders relative to our capacity;
- the typically short life cycle of our customers' products;
- changes in our sales mix to our customers;
- the timing of our expenditures in anticipation of future orders;
- our effectiveness in managing manufacturing processes;
- changes in cost and availability of labor and components;
- changes in economic conditions; and
- local events that affect our production volume.

The electronic manufacturing services industry is impacted by the state of the electronics industry, general U.S. and global economic conditions, and worldwide events. A continued slowdown in the U.S. or global economies or the particular industries served by us may result in customers reducing orders. Our revenue may be adversely impacted by the slowdown in the worldwide electronics markets, which have been subject to reduced end-market demand and reduced capital spending.

Our emerging microdisplay business may not be successful.

A key element of our current business plan involves the further commercialization of our microdisplay technology. The microdisplay division has never been profitable, and the success of this effort depends on numerous factors. We may be unable to expand our microdisplay business as we currently anticipate. We may make substantial investments in product development, manufacturing, and marketing efforts that may not result in microdisplay sales. Finally, we may have insufficient capital if there are delays in development, manufacturing, and marketing efforts.

Manufacturing an *LCoS* microdisplay involves a significantly different procedure than manufacturing a typical liquid crystal display. Although we added additional equipment to our Arizona manufacturing facility in the last two years for manufacturing *LCoS* microdisplays, the manufacture of microdisplays will require us to overcome numerous challenges, including the following:

- the availability of a sufficient quantity of quality materials;
- the implementation of new manufacturing techniques;
- the incorporation of new handling procedures;
- the maintenance of clean manufacturing environments; and
- the ability to master tighter tolerances in the manufacturing process.

We experienced significant technical and production issues in commencing volume production of *LCoS* microdisplays in 2001 and 2002, and those issues could continue through 2003. These issues could result in the delay of the full implementation of high-volume *LCoS* microdisplay production. In addition, we experienced lower than expected manufacturing yields in *LCoS* microdisplays. Continued lower than expected manufacturing yields could significantly and adversely affect us because of the relatively high cost of the silicon backplanes used in *LCoS* microdisplays.

Various target markets for our microdisplays, including projectors, monitors, digital and high-definition televisions, and portable microdisplays, are uncertain, may be slow to develop, or could utilize competing technologies, especially polysilicon and DMDs. Many manufacturers have well-established positions in these markets. As a result, we must provide customers with lower cost, comparable performance microdisplays for their products. Digital and high-definition television has only recently become available to consumers, and widespread market acceptance is uncertain. Penetrating this market will require us to offer an improved value proposition to existing technology. In addition, the commercial success of the portable microdisplay market is uncertain. Gaining acceptance in this market may prove difficult because of the radically different approach of microdisplays to the presentation of information. The failure of any of these target markets to develop as we expect, or our failure to penetrate these markets, will impede our anticipated sales growth. Even if our technology successfully meets our price and performance goals, our customers may not achieve commercial success in selling their products that incorporate our microdisplay technology.

We face intense competition.

In our display business, we serve intensely competitive industries that are characterized by price erosion, rapid technological change, and competition from major domestic and international companies. Many of our competitors have greater market recognition, larger customer bases, and substantially greater financial, technical, marketing, distribution, and other resources than we possess. In 2001, some OEM customers began expecting to purchase display modules at prices below industry costs, and many of our competitors agreed to those requests. Continued competition of this kind could result in additional pricing pressures, lower sales, reduced margins, and

lower market share. Our competitive position could suffer if one or more of our display customers decide to design and manufacture their own display modules, to use standard devices, that we do not offer, to contract with our competitors, or to use alternative technologies that we may not possess. In addition, our customers sometimes develop a second source, even for displays we design for them. These second source suppliers may win an increasing share of a program, particularly as it grows and matures, by competing primarily on price rather than on design capability.

In our electronic manufacturing services business, we compete primarily on the basis of our engineering, design, testing, and production capabilities; our technological know-how; the responsiveness, quality, flexibility, and price of our services; and our geographic locations. Many of our competitors in this business have substantially greater manufacturing, financial, research, and development resources than we possess and offer broader geographic operations and a greater range of service offerings than we do. We also face competition from the manufacturing operations of current and potential customers, which continually evaluate the benefits of internal manufacturing versus outsourcing.

Our ability to compete successfully depends on a number of factors, both within and outside our control. These factors include the following:

- our success in designing, manufacturing, and/or procuring new products and product solutions, including those implementing new technologies;
- our ability to address the needs of our customers;
- the pricing, quality, performance, reliability, features, ease of use, and diversity of our product solutions and services;
- foreign currency devaluations, especially in Asian currencies, such as the Japanese yen, the Korean won and the Taiwanese dollar, which may cause foreign competitors' products to be priced significantly lower than our product solutions;
- the quality of our customer services;
- our efficiency of production;
- the rate at which customers incorporate our product solutions into their own products; and
- product or technology introductions by our competitors.

Any acquisitions that we undertake could be difficult to integrate, disrupt our business, dilute stockholder value, and harm our operating results.

We plan to continue to review opportunities to buy other businesses or technologies that would complement our current products, expand the breadth of our markets, enhance our technical capabilities, or otherwise offer other growth opportunities. In the past 12 months, we have acquired technologies, assets and goodwill from five companies, and we will likely buy businesses, products, or technologies in the future. If we make any future acquisitions, we could issue stock that would dilute existing stockholders' percentage ownership, incur substantial debt, or assume contingent liabilities. Our recent acquisitions, as well as potential future potential acquisitions, involve numerous risks, including the following:

- problems integrating the purchased operations, technologies, products, or services with our own;
- unanticipated costs associated with the acquisition;
- diversion of management's attention from our core businesses;
- adverse effects on existing business relationships with suppliers and customers;
- risks associated with entering markets in which we have no or limited prior experience; and
- potential loss of key employees and customers of purchased organizations.

Our acquisition strategy entails reviewing and potentially reorganizing acquired business operations, corporate infrastructure and systems, and financial controls. Unforeseen expenses, difficulties, and delays frequently encountered in connection with rapid expansion through acquisitions could inhibit our growth and negatively impact our profitability. We may be unable to identify suitable acquisition candidates or to complete the acquisitions of candidates that we identify. Increased competition for acquisition candidates may increase purchase prices for acquisitions to levels beyond our financial capability or to levels that would not result in the returns required by our acquisition criteria. In addition, we may encounter difficulties in integrating the operations of acquired businesses with our own operations or managing acquired businesses profitably without substantial costs, delays, or other operational or financial problems.

We may issue common or preferred stock and incur substantial indebtedness in making future acquisitions. The size, timing, and integration of any future acquisitions may cause substantial fluctuations in operating results from quarter to quarter. Consequently, operating results for any quarter may not be indicative of the results that may be achieved for any subsequent quarter or for a full fiscal year. These fluctuations could adversely affect the market price of our common stock.

Our ability to grow through acquisitions will depend upon various factors, including the following:

- the availability of suitable acquisition candidates at attractive purchase prices,
- the ability to compete effectively for available acquisition opportunities, and
- the availability of funds or common stock with a sufficient market price to complete the acquisitions.

As a part of our acquisition strategy, we frequently engage in discussions with various companies regarding their potential acquisition by us. In connection with these discussions, we and each potential acquisition candidate exchange confidential operational and financial information, conduct due diligence inquiries, and consider the structure, terms, and conditions of the potential acquisition. In certain cases, the prospective acquisition candidate agrees not to discuss a potential acquisition with any other party for a specific period of time, grants us an option to purchase the prospective business for a designated price during a specific time, and agrees to take other actions designed to enhance the possibility of the acquisition, such as preparing audited financial information. Potential acquisition discussions frequently take place over a long period of time and involve difficult business integration and other issues, including in some cases, management succession and related matters. As a result of these and other factors, a number of potential acquisitions that from time to time appear likely to occur do not result in binding legal agreements and are not consummated.

We cannot assure you that we would be successful in overcoming problems encountered in connection with such acquisitions, and our inability to do so could adversely affect our business.

We are subject to lengthy development periods and product acceptance cycles.

We sell our products and services to OEMs, which then incorporate them into the products they sell. OEMs make the determination during their product development programs whether to incorporate our products and services or pursue other alternatives. This requires us to make significant investments of time and capital well before our customers introduce their products incorporating these products and services and before we can be sure that we will generate any significant sales to our customers or even recover our investment.

During a customer's entire product development process, we face the risk that our products will fail to meet our customer's technical, performance, or cost requirements or will be replaced by a competing product or alternative technological solution. Even if we complete our design or new production introduction process in a manner satisfactory to our customer, the customer may delay or terminate its product development efforts. The occurrence of any of these events would adversely affect our operating results. The lengthy development period also means that it is difficult to immediately replace an unexpected loss of existing business.

We do not have long-term purchase commitments from our customers.

Our customers generally do not provide us with firm, long-term volume purchase commitments. In addition, the worldwide adverse economic slowdown commencing in 2001 has led to radically shortened lead times

on purchase orders. Although we sometimes enter into manufacturing contracts with our customers, these contracts clarify order lead times, inventory risk allocation, and similar matters rather than provide firm, long-term volume purchase commitments. As a result, customers can generally cancel purchase commitments or reduce or delay orders at any time. The cancellation, delay, or reduction of customer commitments could result in reduced revenue and in our holding excess and obsolete inventory or having unabsorbed manufacturing capacity. The large percentage of our sales to customers in the electronics industry, which is subject to severe competitive pressures, rapid technological change, and product obsolescence, increases our inventory and overhead risks.

In addition, we make significant decisions, including determining the levels of business that we will seek and accept, production schedules, component procurement commitments, facility requirements, personnel needs, and other resource requirements, based on our estimates of customer requirements. The short-term nature of our customers' commitments and the possibility of rapid changes in demand for their products reduce our ability to estimate accurately the future requirements of those customers. Because many of our costs and operating expenses are relatively fixed, a reduction in customer demand can harm our gross margins and operating results.

On occasion, customers may require rapid increases in production, which can stress our resources and reduce operating margins. Although we have had a net increase in our manufacturing capacity over the past few years, we may not have sufficient capacity at any given time to meet all of our customers' demands or to meet the requirements of a specific project.

Our operating results have been materially and adversely affected in the past as a result of the failure to obtain anticipated orders and deferrals or cancellations of purchase commitments because of changes in customer requirements. For example, we have made announcements in the past that sales would not meet our expectations because of delays in customer programs.

We depend on the market acceptance of the products of our customers.

We do not sell any products to end users. Instead, we design and manufacture various display product solutions that our customers incorporate into their products and provide electronic manufacturing services to OEMs. As a result, our success depends almost entirely upon the widespread market acceptance of our customers' products. Any significant slowdown in the demand for our customers' products would adversely affect our business.

Because our success depends on the widespread market acceptance of our customers' products, we must identify industries that have significant growth potential and establish relationships with OEMs in those industries. Our failure to identify potential growth opportunities or establish relationships with OEMs in those industries would adversely affect our business.

Our dependence on the success of the products of our customers exposes us to a variety of risks, including the following:

- our ability to provide significant design and manufacturing services for customers on a timely and cost-effective basis;
- our success in maintaining customer satisfaction with our design and manufacturing services;
- our ability to match our design and manufacturing capacity with customer demand and to maintain satisfactory delivery schedules;
- customer order patterns, changes in order mix, and the level and timing of orders placed by customers that we can complete in a quarter; and
- the cyclical nature of the industries and markets we serve.

Our failure to address these risks may cause our sales to decline.

Shortages of components and materials may delay or reduce our sales and increase our costs.

We rely on a limited number of suppliers for many components used in our manufacturing and assembly processes. We do not have any long-term supply agreements. At various times, there have been shortages of some

of the electronic components that we use and suppliers of some components have lacked sufficient capacity to meet the demand for these components. Our inability to obtain sufficient quantities of components and other materials necessary to produce our displays and to provide our electronic manufacturing services could result in reduced or delayed sales or lost orders, increased inventory, and underutilized manufacturing capacity. Any delay in or loss of sales could adversely impact our operating results. In addition, we may not be able to pass on component and materials price increases to our customers, particularly in the case of turnkey manufacturing agreements. We obtain many of the materials we use in the manufacture of our displays and to provide our electronic manufacturing services from a limited number of foreign suppliers, particularly suppliers located in Asia. As a result, we are subject to increased costs, supply interruptions, and difficulties in obtaining materials. Our customers also may encounter difficulties or increased costs in obtaining from others the materials necessary to produce their products into which our product solutions are incorporated.

We depend on Taiwan-based United Microelectronics Corporation, or UMC, for the fabrication of ASICs and backplanes related to our microdisplay business. We do not have a long-term contract with UMC. As a result, UMC is not obligated to supply us with ASICs or backplanes for any specific period, in any specific quantity, or at any specific price, except as provided in purchase orders from time to time. The termination of our arrangements with UMC or its inability or unwillingness to provide us with the necessary amount or quality of ASICs or backplanes on a timely basis would adversely affect our ability to manufacture and ship our microdisplay products until alternative sources of supply could be arranged. We cannot assure you that we would be able to secure alternative arrangements.

Materials and components for some of our major programs from time to time have been subject to allocation because of shortages of these materials and components. During 1998, we occasionally delayed sales of our LCD modules as a result of the unavailability of LCD polarizers and IC drivers, or ASICs. During 1999, we experienced difficulties obtaining our requirements for ASICs as a result of a worldwide shortage. We also experienced a material supply interruption in ASICs for a key program in the fourth quarter of 2000. These shortages resulted in lost sales opportunities. Similar shortages in the future could have a material adverse effect on our business.

Our operating results may be adversely affected by excess inventory.

We typically purchase components and other materials in anticipation of customer orders based on customer forecasts. For a variety of reasons, such as decreased end-user demand for products containing our modules or customer solutions as for products that we are manufacturing on a contract basis, our customers may not purchase all of our product solutions or products we have committed to manufacture for which we have purchased components or other supplies. In such event, we could attempt to recoup our materials and manufacturing costs by various means, including returning components to our suppliers, disposing of excess inventory through other channels, or attempting to require our OEM customers to purchase or otherwise compensate us for such excess inventory. These efforts, however, may not be successful. To the extent we are unsuccessful in recouping our materials and manufacturing costs, our operating result would be adversely affected and excess inventory would reduce our working capital.

We must maintain satisfactory manufacturing yields and capacity.

Our inability to maintain high levels of productivity or satisfactory delivery schedules at our manufacturing facilities in Manila, Beijing, Washington, Massachusetts, or Arizona would adversely affect our operating results. The design and manufacture of electronic devices are highly complex processes that are sensitive to a wide variety of factors, including the level of contaminants in the manufacturing environment, impurities in the materials used, and the performance of personnel and equipment. As is typical in the industry, at times we have experienced lower than anticipated manufacturing yields and lengthening of delivery schedules. We may encounter lower manufacturing yields and longer delivery schedules as we expand our electronic manufacturing services and as we manufacture LCoS microdisplays in higher volumes. In addition, the complexity of manufacturing processes will increase along with increases in the sophistication of our display modules and other products we produce.

Any problems with our manufacturing operations could result in the lengthening of our delivery schedules, reductions in the quality or performance of our design and manufacturing services, and reduced customer satisfaction.

Our business depends on new products and technologies.

We operate in rapidly changing industries. Technological advances, the introduction of new products, and new design and manufacturing techniques could adversely affect our business unless we are able to adapt to the changing conditions. As a result, we will be required to expend substantial funds for and commit significant resources to the following:

- continue research and development activities on existing and potential product solutions;
- engage additional engineering and other technical personnel;
- purchase advanced design, production, and test equipment;
- maintain and enhance our technological capabilities;
- develop and market manufacturing services that meet changing customer needs;
- anticipate or respond to technological changes in manufacturing processes on a cost-effective and timely basis; and
- expand our manufacturing capacity.

Our future operating results will depend to a significant extent on our ability to continue to provide new product solutions and electronic manufacturing services that compare favorably on the basis of time to introduction, cost, and performance with the design and manufacturing capabilities of OEMs and competitive third-party suppliers and technologies. Our success in attracting new customers and developing new business depends on various factors, including the following:

- utilization of advances in technology;
- innovative development of new solutions for customer products;
- efficient and cost-effective services; and
- timely completion of the design and manufacture of new products and product solutions.

Our efforts to develop new technologies may not result in commercial success.

Our efforts with respect to incorporating new technologies in our products may not result in customer or widespread market acceptance. Some or all of those technologies may not successfully make the transition from the development stage to cost-effective production as a result of technology problems, competitive cost issues, yield problems, and other factors. Even when we successfully complete an introduction with respect to a particular technology, our customers may determine not to introduce or may terminate products utilizing the technology for a variety of reasons, including the following:

- difficulties with other suppliers of components for the products;
- superior technologies developed by our competitors;
- price considerations;
- lack of anticipated or actual market demand for the products; and
- unfavorable comparisons with products introduced by others.

The nature of our business requires us to make capital expenditures and investments for new technologies. For example, our capital acquisition value of the assets, including intangibles such as tooling, licenses, and patents for *LCoS* microdisplays, currently our largest research and development effort, was \$27.4 million through December 31, 2002. To facilitate the development of our *LCoS* microdisplay products, we also made an equity investment of \$3.8 million in Inviso, Inc., which we had to write off in 2001 as a result of the closing of those operations. In 2002, we purchased all of the technology of Inviso for \$780,000. In addition, we purchased assets and technology of the former Light Valve business unit of National Semiconductor Corporation for approximately \$3.6 million during

1999 and the technology and certain assets of Zight Corporation for approximately \$2.6 million in early 2002. We also invested \$1.25 million in a microdisplay component related start-up company, Silicon Bandwidth, Inc., during 2001 and \$5.1 million in ColorLink, Inc., another private company focusing on a key component for LCoS microdisplay light engines during 2002. We may be required to make similar investments and acquisitions in the future to maintain or enhance our ability to offer technological solutions.

Significant expenditures relating to one or more new technologies, especially LCoS microdisplays, that ultimately prove to be unsuccessful for any reason could have a material adverse effect on us. In addition, any investments or acquisitions made to enhance our technologies may prove to be unsuccessful.

Our inability to maintain our technological expertise in design and manufacturing processes would adversely affect our competitive condition.

Our success depends on our ability to develop and provide design and manufacturing services that meet the changing needs of our customers. This requires us to anticipate and respond to technological changes in design and manufacturing processes in a cost-effective and timely manner. To achieve this goal, we continually evaluate the advantages and feasibility of new product design and manufacturing processes. We cannot assure you that we will be successful.

We face risks associated with international operations.

Our manufacturing operations in Manila and Beijing and our sales and distribution operations in Europe and Asia create a number of logistical and communications challenges. Our international operations also expose us to various economic, political, and other risks, including the following:

- management of a multi-national organization;
- compliance with local laws and regulatory requirements as well as changes in those laws and requirements;
- imposition of restrictions on currency conversion or the transfer of funds;
- transportation delays or interruptions and other effects of less developed infrastructures;
- foreign exchange rate fluctuations;
- difficulties in staffing and managing foreign personnel and diverse cultures;
- employment and severance issues;
- overlap of tax issues;
- tariffs and duties;
- possible employee turnover or labor unrest;
- lack of developed infrastructure;
- the burdens and costs of compliance with a variety of foreign laws; and
- political or economic instability in countries in which we conduct business.

Changes in policies by the United States or foreign governments resulting in, among other things, increased duties, higher taxation, currency conversion limitations, restrictions on the transfer or repatriation of funds, limitations on imports or exports, or the expropriation of private enterprises also could have a material adverse effect on us. Any actions by our host countries to reverse policies that encourage foreign investment or foreign trade also could adversely affect our operating results. In addition, U.S. trade policies, such as "most favored nation" status and trade preferences for certain Asian nations, could affect the attractiveness of our services to our U.S. customers.

We depend on our manufacturing operations.

We depend on our manufacturing operations in Arizona, Washington, Massachusetts, Manila, and China. Our Arizona facility and its high-volume *LCoS* microdisplay manufacturing line are critical to our success in *LCoS* microdisplays. We intend, at least initially, to produce all of our *LCoS* microdisplays on this dedicated line. This facility also houses our principal research, development, engineering, design, and managerial operations for *LCoS* microdisplays. Any event that causes a disruption of the operation of this facility for even a relatively short period of time would adversely affect our ability to provide both technical and manufacturing support for our customers, especially our microdisplay customers.

Any disruption or termination of our manufacturing operations in Manila or air transportation with the Philippines, even for a relatively short period of time, would adversely affect our operations. The Philippines have been subject to volcanic eruptions, typhoons, and substantial civil disturbances, including attempted military coups against the government, since we commenced operations there in 1986. Cumulative capital investments in the Philippines amounted to approximately \$18.3 million through December 31, 2002. We believe that our manufacturing operations in Manila constitute one of our most important resources and that it would be difficult to replace the low-cost, high-performance facility or the highly trained production staff in the event of the disruption or termination of our manufacturing operations there.

Cumulative capital investments in China amounted to approximately \$13.2 million through December 31, 2002. Our operations and assets in China are subject to significant political, economic, legal, and other uncertainties in China. The Chinese government recently has been pursuing economic reform policies, including the encouragement of foreign trade and investment and greater economic decentralization. The Chinese government, however, may not continue to pursue these policies, may not successfully pursue these policies, or may significantly alter these policies from time to time. China currently does not have a comprehensive and highly developed system of laws, particularly with respect to foreign investment activities and foreign trade. Enforcement of existing and future laws and contracts is uncertain, and implementation and interpretation of laws may be inconsistent. As the Chinese legal system develops, the passage of new laws, changes in existing laws, and the preemption of local regulations by national laws may adversely affect us. We also could be adversely affected by a number of other factors, including the following:

- the imposition of austerity measures intended to reduce inflation;
- inadequate development or maintenance of infrastructure, including the unavailability of adequate power and water supplies, transportation, raw materials, and parts; and
- a deterioration of the general political, economic, or social environment in China.

Although China recently joined the World Trade Organization, we cannot be certain whether or to what extent trade relations with China will continue to improve. Any developments that adversely affect trade relations between the United States and China in the future could adversely affect us by increasing the cost to U.S. customers of products manufactured by us in China.

We face risks associated with international trade and currency exchange.

Political and economic conditions abroad may adversely affect our foreign manufacturing and sales operations. Protectionist trade legislation in either the United States or foreign countries, such as a change in the current tariff structures, export or import compliance laws, or other trade policies, could adversely affect our ability to manufacture or sell products and product solutions in foreign markets and to purchase materials or equipment from foreign suppliers.

While we transact business predominantly in U.S. dollars and bill and collect most of our sales in U.S. dollars, we collect a portion of our revenue in non-U.S. currencies, such as the Chinese renminbi. In the future, customers increasingly may make payments in non-U.S. currencies, such as the Euro. In addition, we account for a portion of our costs, such as payroll, rent, and indirect operating costs, in non-U.S. currencies, including Philippine pesos, British pounds sterling, and Chinese renminbi.

Fluctuations in foreign currency exchange rates could affect our cost of goods and operating margins and could result in exchange losses. In addition, currency devaluation can result in a loss to us if we hold deposits of that currency. The Philippine peso suffered a major devaluation in late 1997, and the Chinese renminbi has experienced significant devaluation against most major currencies in recent years. Hedging foreign currencies can be difficult, especially if the currency is not freely traded. We cannot predict the impact of future exchange rate fluctuations on our operating results.

The risks described above are particularly important since sales outside North America represented 83.2% of our net sales in 2001 and 85.1% of our net sales in 2002. Sales in foreign markets, primarily Europe and China, to OEMs based in the United States accounted for almost all of our international sales in both of these periods.

Variability of customer requirements may adversely affect our operating results.

Custom manufacturers for OEMs must provide increasingly rapid product turnaround and respond to ever-shorter lead times. A variety of conditions, both specific to individual customers and generally affecting the demand for their products, may cause customers to cancel, reduce, or delay orders. Cancellations, reductions, or delays by a significant customer or by a group of customers could adversely affect our business. On occasion, customers require rapid increases in production, which can strain our resources and reduce our margins. Although we have increased our manufacturing capacity, we may lack sufficient capacity at any given time to meet our customers' demands if their demands exceed anticipated levels.

Our operating results have significant fluctuations.

In addition to the variability resulting from the short-term nature of our customers' commitments, other factors contribute to significant periodic and seasonal quarterly fluctuations in our results of operations. These factors include the following:

- the timing of orders;
- the volume of orders relative to our capacity;
- product introductions and market acceptance of new products or new generations of products;
- evolution in the life cycles of customers' products;
- timing of expenditures in anticipation of future orders;
- effectiveness in managing manufacturing processes and costs;
- changes in cost and availability of labor and components;
- introduction and market acceptance of our customers' products;
- changes in economic conditions generally or in our customers' markets;
- product mix;
- pricing and availability of competitive products and services; and
- changes or anticipated changes in economic conditions.

Accordingly, you should not rely on the results of any past periods as an indication of our future performance. It is likely that in some future period, our operating results may be below expectations of public market analysts or investors. If this occurs, our stock price may decline.

Products we manufacture may contain design or manufacturing defects, which could result in reduced demand for our services and liability claims against us.

We manufacture products to our customers' specifications, which are highly complex and may at times contain design or manufacturing errors or failures. Any defects in the products we manufacture, whether caused by a design, manufacturing, or component failure or error, may result in delayed shipments to customers or reduced or

cancelled customer orders. If these defects occur in large quantities or too frequently, our business reputation also may be impaired. In addition, these defects may result in liability claims against us.

We must effectively manage our growth.

The failure to manage our growth effectively could adversely affect our operations. We have increased the number of our manufacturing and design programs and plan to expand further the number and diversity of our programs in the future. Our ability to manage our planned growth effectively will require us to

- enhance our operational, financial, and management systems;
- expand our facilities and equipment; and
- successfully hire, train, and motivate additional employees, including the technical personnel necessary to operate our production facilities in Arizona, Washington, Massachusetts, Manila, and Beijing.

The expansion and diversification of our product and customer base may result in increases in our overhead and selling expenses. We also may be required to increase staffing and other expenses as well as our expenditures on capital equipment and leasehold improvements in order to meet the anticipated demand of our customers. Customers, however, generally do not commit to firm production schedules for more than a short time in advance. Any increase in expenditures in anticipation of future orders that do not materialize would adversely affect our profitability. Customers also may require rapid increases in design and production services that place an excessive short-term burden on our resources.

We depend on key personnel.

Our development and operations depend substantially on the efforts and abilities of our senior management and technical personnel. The competition for qualified management and technical personnel is intense. The loss of services of one or more of our key employees or the inability to add key personnel could have a material adverse effect on us. Although we maintain non-competition and nondisclosure covenants with certain key personnel, we do not have any fixed-term agreements with, or key person life insurance covering, any officer or employee.

We must protect our intellectual property, and others could infringe on or misappropriate our rights.

We believe that our continued success depends in part on protecting our proprietary technology. Third parties could claim that we are infringing their patents or other intellectual property rights. In the event that a third party alleges that we are infringing its rights, we may not be able to obtain licenses on commercially reasonable terms from the third party, if at all, or the third party may commence litigation against us. The failure to obtain necessary licenses or other rights or the institution of litigation arising out of such claims could materially and adversely affect us.

We rely on a combination of patent, trade secret, and trademark laws, confidentiality procedures, and contractual provisions to protect our intellectual property. We seek to protect certain of our technology under trade secret laws, which afford only limited protection. We face risks associated with our intellectual property, including the following:

- pending patent applications may not be issued;
- intellectual property laws may not protect our intellectual property rights;
- third parties may challenge, invalidate, or circumvent any patent issued to us;
- rights granted under patents issued to us may not provide competitive advantages to us;
- unauthorized parties may attempt to obtain and use information that we regard as proprietary despite our efforts to protect our proprietary rights;
- others may independently develop similar technology or design around any patents issued to us; and

- effective protection of intellectual property rights may be limited or unavailable in some foreign countries, such as China, in which we operate.

We may not be able to obtain effective patent, trademark, service mark, copyright, and trade secret protection in every country in which we sell our products. We may find it necessary to take legal action in the future to enforce or protect our intellectual property rights or to defend against claims of infringement. Litigation can be very expensive and can distract our management's time and attention, which could adversely affect our business. In addition, we may not be able to obtain a favorable outcome in any intellectual property litigation.

The market price of our common stock may be volatile.

The market price of our common stock has been extremely volatile. Our stock price increased dramatically during the three-year period ended December 31, 1994, but declined significantly during 1995 and 1996. Our stock price increased again during 1997, but declined significantly in 1998. Our stock price again increased significantly during 1999 and in early 2000, but suffered a major decline in the second half of 2000. The stock declined again in 2001 and 2002. The trading price of our common stock in the future could continue to be subject to wide fluctuations in response to various factors, including the following:

- variations in our quarterly operating results;
- actual or anticipated announcements of technical innovations or new product developments by us or our competitors;
- changes in analysts' estimates of our financial performance;
- general conditions in the electronics industry; and
- worldwide economic and financial conditions.

In addition, the stock market has experienced extreme price and volume fluctuations that have particularly affected the market prices for many high-technology companies and that often have been unrelated to the operating performance of these companies. These broad market fluctuations and other factors may adversely affect the market price of our common stock.

Adverse trends in the electronics industry may adversely affect our operating results.

Our business depends on the electronics industry, which is subject to rapid technological change, short product life cycles, and margin pressures. In addition, the electronics industry historically has been cyclical and subject to significant downturns characterized by diminished product demand, accelerated erosion of average selling prices, and production over-capacity. We seek to reduce our exposure to industry downturns and cyclicity by providing design and production services for leading companies in a variety of rapidly expanding segments of the electronics industry. Despite these efforts, economic conditions affecting the electronics industry in general or our major customers may adversely affect our operating results.

We must finance the growth of our business and the development of new products and services.

To remain competitive, we must continue to make significant investments in product development, equipment, and facilities. As a result of the increase in fixed costs and operating expenses related to these capital expenditures, our failure to increase sufficiently our net sales to offset these increased costs would adversely affect our operating results.

From time to time, we may seek additional equity or debt financing to provide for the capital expenditures required to maintain or expand our design and production facilities and equipment. We cannot predict the timing or amount of any such capital requirements at this time. If such financing is not available on satisfactory terms, we may be unable to expand our business or to develop new business at the rate desired and our operating results may suffer. Debt financing increases expenses and must be repaid regardless of operating results. Equity financing could result in additional dilution to existing stockholders.

Potential strategic alliances may not achieve their objectives.

We have entered into various strategic alliances, such as our alliances with OSRAM Opto Semiconductors for OLEDs, and we plan on entering into other similar types of alliances in the future. Among other matters, we will explore strategic alliances designed to enhance or complement our technology or to work in conjunction with our technology; to increase our manufacturing capacity; to provide necessary know-how, components, or supplies; and to develop, introduce, and distribute products and services utilizing our technology and know-how. Any strategic alliances may not achieve their strategic objectives, and parties to our strategic alliances may not perform as contemplated.

We could be required to expend substantive resources to comply with governmental regulations.

Our operations are subject to certain federal, state, and local regulatory requirements relating to environmental, waste management, health, and safety matters. We believe we operate in substantial compliance with all applicable requirements. There can be no assurance, however, that material costs and liabilities will not arise from complying with these or from new, modified, or more stringent requirements. In addition, our past, current, or future operations may give rise to claims of exposure by employees or the public or to other claims or liabilities relating to environmental, waste management, or health and safety concerns.

Change in control provisions may adversely affect existing stockholders.

Our restated certificate of incorporation and the Delaware General Corporation Law contain provisions that may have the effect of making more difficult or delaying attempts by others to obtain control of our company, even when these attempts may be in the best interests of stockholders. Our restated certificate also authorizes the board of directors, without stockholder approval, to issue one or more series of preferred stock, which could have voting and conversion rights that adversely affect or dilute the voting power of the holders of common stock. Delaware law also imposes conditions on certain business combination transactions with "interested stockholders."

We have also adopted a stockholders' rights plan intended to encourage anyone seeking to acquire our company to negotiate with our board of directors prior to attempting a takeover. While the plan was designed to guard against coercive or unfair tactics to gain control of our company, the plan may have the effect of making more difficult or delaying any attempts by others to obtain control of our company.

We do not pay cash dividends.

We have never paid any cash dividends on our common stock and do not anticipate that we will pay cash dividends in the foreseeable future. Instead, we intend to apply earnings to the expansion and development of our business.

ITEM 2. PROPERTIES

We own and occupy an approximately 97,000 square foot facility in Tempe, Arizona, which houses our U.S.-based manufacturing operations and our research, development, engineering, design, and corporate functions. We entered into a ground lease for this facility that extends through March 31, 2069, subject to renewal and purchase options as well as early termination provisions. Costs to initially construct, furnish, and equip the Tempe facility were approximately \$24.0 million.

We lease an approximately 65,000 square foot manufacturing facility in Camelray Industrial Park, Barangay Tulo, Calamba, Laguna, the Philippines with an option to purchase the premises. The lease expires in 2010.

We own and occupy an approximately 46,000 square foot facility in Beijing, China, including 29,000 square feet of manufacturing space. We constructed this facility on property that we have purchased on a long-term land use contract. Costs to construct, furnish, and equip the Beijing facility were approximately \$10.9 million.

We lease an approximately 32,000 square foot manufacturing facility in Redmond, Washington. The lease expires in 2007. In addition, in Redmond, Washington, we also lease two other facilities. One facility is a 30,000 square foot building, which we have used for final product assembly (box build) and logistics operations. This lease

expires in 2006. The third building that we lease in Redmond, Washington handles returns, repairs, and storage and is approximately 33,000 square feet. That lease expires in 2006.

We lease approximately 21,000 square feet of manufacturing and office space in Marlboro, Massachusetts, where we maintain a business unit focusing on our ruggedized monitor business. That lease expires in 2004

We lease approximately 7,000 square feet of space in Boulder, Colorado, where we maintain a business unit focusing on personal microdisplay systems and comprised of former Zight Corporation employees. This lease has no long-term commitments and is renewed each month.

We lease approximately 3,500 square feet of office and warehouse space in Swindon, United Kingdom, where we maintain our European administrative offices and a distribution warehouse.

ITEM 3. LEGAL PROCEEDINGS

There are no legal proceedings to which we are a party or to which any of our properties are subject, other than routine litigation incident to our business that is covered by insurance or an indemnity or that we do not expect to have a material adverse effect on our company. It is possible, however, that we could incur claims for which we are not insured or that exceed the amount of our insurance coverage.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Our common stock has been listed on the New York Stock Exchange under the symbol "TFS" since December 29, 1994. The following table sets forth the quarterly high and low sales prices of our common stock as reported on the New York Stock Exchange for the periods indicated:

	<u>High</u>	<u>Low</u>
2001:		
First Quarter	\$27.11	\$11.74
Second Quarter	18.35	10.68
Third Quarter	23.85	14.18
Fourth Quarter	21.74	14.60
2002:		
First Quarter	\$17.80	\$12.19
Second Quarter	15.85	9.05
Third Quarter	10.73	4.55
Fourth Quarter	7.45	3.62
2003:		
First Quarter (through March 21, 2003)	\$ 6.34	\$ 3.67

As of March 21, 2003, there were approximately 652 holders of record of our common stock. The closing sale price of our common stock on the New York Stock Exchange on March 21, 2003 was \$5.55 per share.

Our policy is to retain earnings to provide funds for the operation and expansion of our business. We have not paid cash dividends on our common stock and do not anticipate that we will do so in the foreseeable future. Furthermore, our credit facility with Comerica Bank does not permit us to pay dividends without the consent of Comerica Bank. The payment of dividends in the future will depend on our growth, profitability, financial condition, and other factors that our board of directors may deem relevant.

ITEM 6. SELECTED FINANCIAL DATA

The selected historical financial data presented below are derived from our consolidated financial statements. The financial statements from 2002 have been audited by Deloitte & Touche LLP, independent auditors. The selected financial data should be read in conjunction with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the Consolidated Financial Statements and the Notes thereto included elsewhere in this report. All share amounts and per share data have been adjusted to reflect the four-for-three split of our common stock effected in December 1999 and the three-for-two split of our common stock effected in May 2000.

	Years Ended December 31,				
	1998	1999	2000	2001	2002
	(in thousands, except per share data)				
Consolidated Statements of Operations Data:					
Net sales	\$ 95,047	\$ 147,408	\$ 160,684	\$ 119,136	\$ 88,026
Costs and expenses:					
Cost of sales	76,149	117,583	124,724	121,514	85,133
Selling, general, and administrative	7,334	11,170	9,501	10,130	11,324
Research, development, and engineering	7,159	8,745	13,295	17,618	17,968
Write-down of assets held for sale	-	-	-	-	4,545
Amortization of customer lists	-	-	-	-	256
	<u>90,642</u>	<u>137,498</u>	<u>147,520</u>	<u>149,262</u>	<u>119,226</u>
Operating income (loss)	4,405	9,910	13,164	(30,126)	(31,200)
Other income (expense), net.....	(42)	(18)	7,184	3,450	3,492
Minority interest in loss of consolidated subsidiary.....	-	-	-	167	84
Income (loss) before income taxes	4,363	9,892	20,348	(26,509)	(27,624)
Provision for (benefit from) income taxes	<u>1,773</u>	<u>2,968</u>	<u>5,514</u>	<u>(8,745)</u>	<u>(10,653)</u>
Net income (loss)	<u>\$ 2,590</u>	<u>\$ 6,924</u>	<u>\$ 14,834</u>	<u>\$ (17,764)</u>	<u>\$ (16,971)</u>
Earnings (loss) per common share:					
Basic	<u>\$ 0.17</u>	<u>\$ 0.44</u>	<u>\$ 0.73</u>	<u>\$ (0.83)</u>	<u>\$ (0.79)</u>
Diluted	<u>\$ 0.17</u>	<u>\$ 0.43</u>	<u>\$ 0.69</u>	<u>\$ (0.83)</u>	<u>\$ (0.79)</u>
Weighted average number of common shares:					
Basic	<u>15,277</u>	<u>15,563</u>	<u>20,457</u>	<u>21,401</u>	<u>21,465</u>
Diluted	<u>15,604</u>	<u>16,005</u>	<u>21,636</u>	<u>21,401</u>	<u>21,465</u>
	December 31,				
	1998	1999	2000	2001	2002
	(in thousands)				
Consolidated Balance Sheet Data:					
Working capital.....	\$ 24,825	\$ 60,853	\$ 194,492	\$ 169,123	\$ 107,885
Total assets.....	77,904	126,930	267,843	245,888	222,694
Notes payable to banks, term loans and long-term debt.....	8,095	-	2,706	2,706	2,734
Stockholders' equity	51,096	101,220	242,002	223,944	205,668

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

FORWARD-LOOKING STATEMENTS AND FACTORS THAT MAY AFFECT RESULTS

The statements contained in this report on Form 10-K that are not purely historical are forward-looking statements within the meaning of applicable securities laws. Forward-looking statements include statements regarding our "expectations," "anticipation," "intentions," "beliefs," or "strategies" regarding the future. Forward-looking statements also include statements regarding revenue, margins, expenses, and earnings analysis for fiscal 2003 and thereafter; technological innovations; future products or product development; our product development strategies; potential acquisitions or strategic alliances; the success of particular product or marketing programs; the amounts of revenue generated as a result of sales to significant customers; and liquidity and anticipated cash needs and availability. All forward-looking statements included in this report are based on information available to us as

of the filing date of this report, and we assume no obligation to update any such forward-looking statements. Our actual results could differ materially from the forward-looking statements. Among the factors that could cause actual results to differ materially are the factors discussed in Item 1, "Business – Risk Factors."

Overview

We offer advanced design and manufacturing services to original equipment manufacturers, commonly referred to as OEMs. We have two business divisions, each reportable as a segment. The first segment is referred to as the Integrated Systems and Displays division. In that division, we focus on display products and our electronic manufacturing services. We specialize in custom and standard display modules utilizing various display technologies, including liquid crystal displays, or LCDs, organic light emitting displays, or OLEDs, and cathode ray tubes, or CRTs. Our display modules are of varying sizes and have varying levels of integration. At a minimum, each display module includes a display, a custom driver, and a flexible connector. We also provide ruggedized and customized monitors. We also provide value-added services, which increase our competitiveness, by assembling additional components onto the module based upon the specific needs of the customer. These additional components may include such items as keypads, microphones, speakers, light guides, and optics. Late in 2002, we expanded the value-added manufacturing services we provide in the ISD division through our acquisition of ETMA Corporation, described below. As a result of that acquisition, we now provide printed circuit board assembly, or PCBA, and box build capabilities to customers, even in products that do not need displays.

In our second business segment, referred to as the Microdisplay division, we offer a range of *LCoS* product solutions with different levels of integration from individual imagers to optical light engines. The initial target markets for our *LCoS* microdisplay products are large screen television sets, front projectors, and near-to-eye or personal display system applications.

Substantially all of our sales are in our ISD division. In the past several years, we derived our revenue principally from major OEMs, with more than 75% of our net sales in 2000, 2001, and 2002 from the mobile handset market. As a result of the acquisition of ETMA and the expected reduction in Motorola business, we expect our revenue from the handset market to drop to below 20% in 2003. When we win a custom program, our customers occasionally pay a portion of our nonrecurring engineering expenses to defray the costs of custom design, as well as all or a portion of the costs of nonrecurring tooling for custom or specialized components. The typical design program life cycle of a custom-designed display module is three to fifteen months and includes technical design, prototyping, pilot manufacturing, and high-volume manufacturing. The cycle is shorter in the manufacturing services business where no display is involved and where the design has already been done by the OEM customer. Until 2001, our strategy in our display business was to seek large-volume programs from major OEMs. In that situation, the minimum production quantity for a display module typically approximates 100,000 units per year, although the production rate for some programs has been higher than 100,000 units per week. In 2002, we re-focused our strategy on lower-volume programs with potentially higher gross margins. We re-focused our strategy because some OEMs with high-volume programs began to expect to purchase display modules for less than industry costs. Early in 2003, we licensed the standard product line of Data International. The standard products of Data International that we sell will fit into the strategy of lower-volume programs. The selling price of our products sold in the ISD division now range from between \$3 and \$4,300 per unit.

We experienced substantial growth from 1993 through 1995, primarily as a result of sales to OEMs in the wireless communications industry, which grew substantially during that period. During that period, our primary customer in the wireless communications industry was Motorola. We experienced substantial growth in 1999 and 2000, but our sales substantially declined in 2001 as a result of the world-wide economic slowdown. Motorola and its subcontractors accounted for 63.6% of our sales in 1998, 86.1% in 1999, 86.9% in 2000, 85.4% in 2001, and 76.9% in 2002. As a result of our change in strategy regarding high-volume display programs, discussed above, none of our design wins in 2001 and 2002 have been with the handset group at Motorola. Consequently, we expect total Motorola business to decline sharply in 2003. In the third quarter of 2002, Motorola was 77.7% of our business. In the fourth quarter of 2002, Motorola was 54.6% of our business. In the first quarter of 2003, we expect Motorola to be less than 20% of our business. For all of 2003, we expect Motorola to account for less than 10% of our revenue.

During the past several years, we have experienced seasonal quarterly fluctuations in our net sales as our OEM customers developed retail products with shorter product life cycles and phased out older programs early in the year following holiday sales. Therefore, as compared with the fourth quarter of a calendar year, sales are usually lower in the following quarter. Although that pattern of first quarter softness is expected in 2003, our revenue is not actually expected to decline because of the ETMA acquisition that occurred in December 2002.

In all of our businesses, we recognize revenue related to product shipments when persuasive evidence of an arrangement exists, delivery of the product or service has occurred, the fee is fixed or determinable, and collectability is probable. These conditions are met at the time we either ship products to customers or when they are received by the customer, depending on when title and risk of loss transfers to the customer. We recognize revenue related to nonrecurring engineering and nonrecurring tooling after service has been rendered. This can be determined based upon completion of agreed upon milestones or deliverables.

Several factors impact our gross margins, including manufacturing efficiencies, product mix, product differentiation, product uniqueness, inventory management, and volume pricing.

In the past, we used our own front-end LCD production line in Tempe, Arizona for the manufacture of more technologically complex and custom high-volume LCDs. We also purchased LCDs from third parties to provide us an alternate source and to ensure available capacity. In order to take advantage of lower labor costs, we traditionally shipped LCDs to our facilities in Manila, the Philippines, or Beijing, China, for assembly into modules.

During 2001, we decided to shut down and move our front-end manufacturing LCD line from Arizona to Asia. We now purchase all of our LCDs from third parties, although we sometimes purchase partially completed LCDs and complete the back-end operations on those LCDs in Manila, as described below. During 2002, we signed a Cooperative Agreement with a Chinese company under which we agreed to sell the equipment used in our front-end LCD line and establish a supply agreement. Under the terms of the Cooperative Agreement, in exchange for our front-end LCD line, we will receive \$3.0 million in cash, favorable LCD glass pricing, and flexible yet assured manufacturing capacity from this strategic partner. In the second quarter of 2002, as a result of signing the Cooperative Agreement, we realized a charge of \$4.5 million for the write-down on the LCD equipment to be sold to the Chinese company. This charge was reported as a separate line item in operating expense. In connection with the Cooperative Agreement, we received \$2.1 million in 2002, all of which was applied against the \$3.0 million sales price and recorded as a reduction in the carrying value of the LCD equipment held for sale. The sale of the equipment is expected to be completed in 2003.

In Tempe, Arizona, we continue to manufacture all of our *LCoS* microdisplays on our high-volume liquid crystal on silicon manufacturing line. In addition, we do all testing and assembly into *LCoS* modules in Tempe.

In Redmond, Washington, we provide engineering support, automated printed circuit board assembly, in-circuit and functional testing, systems integration and box build, complete supply chain management, and turnkey packaging and fulfillment services.

In Marlboro, Massachusetts, we provide aftermarket customization of CRT and LCD monitors.

In Manila, we assemble displays into modules and perform certain back-end LCD processing operations. We conduct all of our operations in Manila at our own factory where we employ our own employees. Until April 2002, our back-end LCD processing operations were conducted in Manila through a third-party subcontract manufacturer. Since that date, however, the Manila back-end LCD processing has been performed in our own facility. The new facility is located in a special Philippines economic zone (PEZA), which allows us to take advantage of certain tax benefits.

In Beijing, we also assemble displays into modules. We conduct our display module operations in Beijing through our wholly owned foreign subsidiary at a facility we own. We also employ all of our own employees in Beijing.

Selling, general, and administrative expense consists principally of administrative and selling costs; salaries, commissions, and benefits to personnel; and related facility costs. We make substantially all of our sales

directly to OEMs through a sales force that consists of both direct technical sales persons and a representative network. As a result, there is no material cost of distribution in our selling, general, and administrative expense. In addition, we have recently incurred substantial marketing and administrative expenses in connection with our LCoS microdisplay business.

Research, development, and engineering expense consists principally of salaries and benefits to scientists, design engineers, and other technical personnel, related facility costs, process development costs, and various expenses for projects, including new product development. Research, development, and engineering expense continues to increase as we develop new display products and technologies, especially LCoS microdisplays.

Since 1997, we have been working on the development of LCoS microdisplays. In 1997, we entered into a strategic alliance with National Semiconductor Corporation for the development of LCoS microdisplay products. Under that alliance, National Semiconductor focused on the silicon technologies needed for microdisplays, and we focused on the liquid crystal technologies. In 1999, National Semiconductor decided to close its microdisplay business unit. In connection with that closing, in July 1999, we purchased certain assets and licensed silicon technologies from National Semiconductor relating to LCoS microdisplays. We paid approximately \$3.0 million in cash and issued warrants to purchase 140,000 shares of our common stock in the transaction, which valued the transaction at approximately \$3.6 million. No additional payments are required under the licenses. We also hired several key technical employees of National Semiconductor to assist in the implementation of the acquired technologies.

In April 1998, we entered into a strategic relationship with Inviso, Inc., a privately held company with numerous patents and proprietary technology related to microdisplay development. We acquired a minority equity interest in Inviso for approximately \$3.3 million. In March 2000, we acquired an additional interest in Inviso for \$500,000, raising our total minority equity interest to \$3.8 million. As part of this strategic relationship, we provided proprietary manufacturing capabilities and liquid crystal expertise, and Inviso provided patented and proprietary technologies and components for the joint development of microdisplay products. In the second quarter of 2001, we wrote off our investment of \$3.8 million in Inviso because we determined that our investment was impaired, as that term is defined under generally accepted accounting principles. Subsequent to our write-off, Inviso was unable to raise funds to operate its business and has since ceased operations. In the second quarter of 2002, we purchased all of the intellectual property of Inviso for \$780,000.

In August 2000, our wholly owned subsidiary, Three-Five Systems (Beijing) Co., Ltd., entered into a strategic agreement with Heibei Jiya Electronics, Co., Ltd. ("Jiya"), a Chinese-based manufacturer of LCD glass. Under the terms of the agreement, Jiya agreed to provide LCD glass to us and reserve a significant amount of LCD glass manufacturing capacity for us. In exchange, we agreed to assist Jiya in further developing its LCD glass manufacturing processes. At the end of the agreement term in February 2002, we had the option to extend the agreement or to acquire a majority interest in Jiya. We elected not to extend the agreement or acquire a majority interest.

In 2001, we invested \$1.25 million in Silicon Bandwidth, Inc., a privately held company providing unique semiconductor and optoelectronic interconnect solutions based upon multiple, patented, proprietary technologies. We are working closely with Silicon Bandwidth to design unique, cost-effective, reconfigurable packaging platforms for LCoS microdisplays.

During the second quarter of 2001, we formed a new company, Three-D OLED L.L.C., with Dupont Displays, a business unit of Dupont Corporation. We owned 51% of this new venture, and Dupont Displays owned 49%. The companies pledged \$3.0 million to the venture. Our share of that obligation was slightly over \$1.5 million. This venture was formed to design, assemble, and market OLED (organic light emitting diode) display modules to OEMs worldwide with the focus on glass substrate, passive matrix OLED displays. In the second quarter of 2002, we agreed with Dupont Displays to liquidate our joint venture with Three-D OLED L.L.C. and enter into a non-equity based Strategic Manufacturing and Supply Agreement. Under that agreement, the parties can continue to work together in a fashion similar to the venture, but the relationship will be nonexclusive. We have not worked with Dupont since the liquidation.

In January 2002, we purchased the intellectual property of Zight Corporation, a private company focused on microdisplays for personal display system applications. In addition, we purchased certain key assets of Zight at a creditor's auction, and we hired seven key technical persons formerly employed by Zight. The total purchase price was approximately \$2.6 million, of which approximately \$2.0 million was related to intangibles.

In July 2002, we invested \$5.0 million in ColorLink, Inc. ColorLink has a leading position worldwide in the development and manufacture of color management technologies for LCoS microdisplays. ColorLink's products consist of color management components and system architectures that are critical for digital projection systems that use high-resolution microdisplays. Those projection systems include color monitors, high-definition televisions and multi-media projectors. This investment furthers our efforts to accelerate as much as possible the establishment of the necessary infrastructure for LCoS microdisplays. An additional \$81,000 was recorded as investment in ColorLink during the third quarter of 2002 for legal and due diligence expenses.

In September 2002, we purchased the assets and ongoing business of AVT, a privately held company that specializes in the design and integration of complex, high-resolution display systems. AVT designs and provides customized and ruggedized flat panel, touchscreen, and rackmount systems for original equipment manufacturers including General Electric, Westinghouse, Gillette and the U.S. military. AVT sources its display components from a variety of companies including Sony, Sharp, NEC, LG, and Samsung. The purchase price of the acquisition was \$12.0 million, which we paid entirely in cash. The purchase agreement also calls for a residual purchase payment of \$2.0 million should the AVT division achieve certain revenue and profit objectives for 2002 and 2003.

In December 2002, we purchased the stock of ETMA Corporation, a privately held company that is an electronic manufacturer for OEM customers in the automotive, computer/server, medical monitoring, and Internet security industries. ETMA offers the manufacturing capabilities of six surface mount manufacturing lines, including one dedicated to new product introduction and prototyping activity. ETMA provides engineering support, automated printed circuit board assembly, in-circuit and functional testing, systems integration and box build, complete supply chain management, and turnkey packaging and fulfillment services. The purchase price of the acquisition was \$38.1 million, which we paid entirely in cash.

In January 2003, we signed licensing and manufacturing agreements with Data International Co., Ltd. of Taiwan. Under those agreements, we become the exclusive channel in the Americas for standard and custom LCD products manufactured by Data International. We also have the right to sell those products through its worldwide channels. The agreements provide us with access to a full suite of standard display products that will round out our existing standard product portfolio. In conjunction with the agreement, we have established a sales office in Orlando and hired sales and applications engineering personnel who have supported Data International's products throughout North and South America for the past ten years. The cost of the license is anticipated to be \$4.0 million, of which \$1.0 million was paid upon signing and the \$3.0 million will be due over the next two years. The unpaid \$3.0 million is subject to reduction if certain revenue and margin targets are not met.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based upon our financial statements, which have been prepared in accordance with generally accepted accounting principles (GAAP) in the United States. During preparation of these financial statements, we are required to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates and judgments, including those related to sales returns, pricing concessions, bad debts, inventories, investments, fixed assets, intangible assets, income taxes, pensions and contingencies. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. The results form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our financial statements.

We recognize sales when persuasive evidence of a sale exists; that is, a product is shipped under an agreement with a customer, risk of loss and title have passed to the customer, the fee is fixed or determinable, and collection of the resulting receivable is reasonably assured. Sales allowances are estimated based upon historical experience of sales returns or pricing concessions. We recognize revenue related to engineering and tooling services after service has been rendered, which is determined based upon completion of agreed upon milestones or deliverables.

We maintain an allowance for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We determine the adequacy of this allowance by regularly evaluating individual customer receivables and considering a customer's financial condition, credit history, and current economic conditions. If the financial condition of our customers were to deteriorate, additional allowances may be required.

We write down our inventory for estimated obsolescence or unmarketable inventory. We write down our inventory to estimated market value based upon assumptions about future demand and market conditions. If actual market conditions are less favorable than those projected by us, additional inventory write-downs may be required.

Pursuant to Financial Accounting Standards Board ("FASB") Statement of Financial Accounting Standards ("SFAS") No. 109, "Accounting for Income Taxes", income taxes are recorded based on current year amounts payable or refundable, as well as the consequences of events that give rise to deferred tax assets and liabilities. We base our estimate of current and deferred taxes on the tax laws and rates that are currently in effect in the appropriate jurisdiction. Changes in tax laws or rates may affect the current amounts payable or refundable as well as the amount of deferred tax assets or liabilities.

We currently have \$13.2 million of net deferred tax assets resulting primarily from net operating loss and tax credit carryforwards. SFAS No. 109 requires that a valuation allowance be established when it is more likely than not that all or a portion of a deferred tax asset will not be realized. Changes in valuation allowances from period to period are included in our tax provision in the period of change. In determining whether a valuation allowance is required, we take into account all evidence with regard to the utilization of a deferred tax asset including our past earnings history, expected future earnings, the character and jurisdiction of such earnings, unsettled circumstances that, if unfavorably resolved, would adversely affect utilization of a deferred tax asset, carryback and carryforward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset. We believe that the net deferred tax assets of \$13.2 million will be realized based primarily on our projected future earnings and scheduling of our deferred tax liabilities. However, the amount of the deferred tax assets actually realized could differ if we have little or no future earnings.

At December 31, 2002, we have a valuation allowance of \$2.1 million for deferred tax assets related to a capital loss carryforward and certain foreign tax credit.

A deferred U.S. tax liability has not been provided on the undistributed earnings of certain foreign subsidiaries because it is our intent to permanently reinvest such earnings. Undistributed earnings of foreign subsidiaries, which have been, or are intended to be, permanently invested in accordance with APB No. 23, *Accounting for Income Taxes - Special Areas*, aggregated approximately \$7.2 million at December 31, 2002.

Long-term assets, such as Long-term Investments, Property, Plant and Equipment, Intangibles, Goodwill and Other Investments, are originally recorded at cost. On an on-going basis, we assess these assets to determine if their current recorded value is impaired. When assessing these assets, we examine future cash flows to determine if impairment is applicable. These cash flows are evaluated for objectivity by using weighted probability techniques and also comparisons of past performance against projections. Assets may also be evaluated by identifying independent market values. If we were to believe that an asset's value was impaired, we would write down the carrying value of the identified asset and charge the impairment as an expense in the period in which the determination was made.

Results of Operations

The following table sets forth, for the periods indicated, the percentage of net sales of certain items in our Consolidated Financial Statements.

	Years Ended December 31,		
	2000	2001	2002
Net sales	100.0%	100.0%	100.0%
Costs and expenses:			
Cost of sales	77.6	102.0	96.7
Selling, general, and administrative	5.9	8.5	12.9
Research, development and engineering	8.3	14.8	20.4
Write-down of assets held for sale	-	-	5.2
Amortization of customer lists	-	-	0.3
	91.8	125.3	135.5
Operating income (loss)	8.2	(25.3)	(35.5)
Other income, net	4.5	2.9	4.0
Minority interest in loss of consolidated subsidiary	-	0.1	0.1
Income (loss) before income taxes	12.7	(22.3)	(31.4)
Provision for (benefit from) income taxes	3.5	(7.4)	(12.1)
Net income (loss)	9.2%	(14.9)%	(19.3)%

Year ended December 31, 2002 compared to year ended December 31, 2001

Net Sales. Net sales decreased 26.1% to \$88.0 million in 2002 from \$119.1 million in 2001. The reduction was primarily because of our reduced volume of business with our major customer Motorola. We shipped 9.5 million units to Motorola in 2002 compared to 11.7 million units in 2001. In addition, the average selling price of those Motorola units shipped in 2002 was substantially lower than in 2001 because of pricing pressures in the high-volume, monochrome LCD market. Shipments were lower to Motorola because of our strategic decision not to seek business from customers that would produce very low or negative gross margins.

Cost of Sales. Cost of sales decreased to 96.7% of net sales in 2002 from 102.0% in 2001. This percentage decrease resulted primarily from cost-reduction efforts undertaken throughout 2002. The cost of sales in the ISD division continued to be higher than our long-range expectations because our fixed costs were under absorbed at our overseas factories as a result of excess capacity. Also contributing to the high cost of sales was the sale of LCoS microdisplay products at a gross margin loss. We incurred a loss for our LCoS microdisplay sales primarily because of the low volume of shipments and low manufacturing yields in those start-up products.

Selling, General, and Administrative Expense. Selling, general, and administrative expense increased 11.9% to \$11.3 million in 2002 from \$10.1 million in 2001. In 2002, SG&A consisted primarily of fixed costs because we had no distribution costs and just a small sales force that focused on custom products. Thus, SG&A increased in 2002, primarily as a result of our acquisitions of AVT and ETMA.

Research, Development, and Engineering Expense. Research, development, and engineering expense increased slightly to \$18.0 million in 2002 from \$17.6 million in 2001. More than 80% of our research, development, and engineering expense related to our Microdisplay division as we continued intensive efforts on continued development of LCoS microdisplays.

Write-Down of Assets Held for Sale. During the second quarter of 2002, we signed a Cooperative Agreement with a Chinese company under which we agreed to sell the equipment of our front-end manufacturing LCD line and establish a supply agreement. Under the terms of the Cooperative Agreement, and in exchange for our LCD equipment, we will receive \$3.0 million in cash, favorable LCD glass pricing, and flexible yet assured manufacturing capacity from this strategic partner. Thus far, we have received \$2.1 million. As a result of signing the Cooperative Agreement, we realized a charge of \$4.5 million for the write-down on the LCD equipment to be sold to the Chinese company. This charge was reported as a separate line item in operating expense.

Amortization of Customer Lists. As a result of the acquisitions of AVT and ETMA, we have added a new line item for operating costs related to the amortization of intangible assets of customer lists that have definable lives. We had no such expense in 2001 and \$256,000 for 2002. Most of that expense related to the acquisition of AVT. The initial total amount of amortizable assets associated with AVT was \$3.0 million. We also acquired ETMA Corporation in the fourth quarter of 2002, and the initial total amount of amortizable assets associated with ETMA was \$2.0 million. The AVT-related assets will be amortized over five years while the ETMA assets will be amortized over three years.

Other Income (Expense), Net. Other income in 2002 was \$3.5 million, slightly higher than other income of \$3.4 million in 2001. Net interest income in 2002 was \$3.3 million compared to \$7.3 million in 2001. We incurred a \$3.8 million write-off of our investment in Inviso, Inc. in 2001 that offset the much higher interest income so that Other Income was almost identical for 2002 and 2001.

Benefit from Income Taxes. We recorded a benefit from income taxes of \$10.7 million in 2002 compared to a benefit for income taxes of \$8.7 million in 2001. In recording the benefit, we used an effective tax rate of 38.6% in 2002 compared to an effective tax rate of 33.0% in 2001. The difference was primarily a change in relative operational results between U.S. and foreign jurisdictions. In other words, a greater portion of our net loss in 2002 related to higher tax rate jurisdictions, thereby causing the accrued tax benefit to be a greater percentage of our net loss. The benefit for income taxes that we have recorded has generated a \$13.2 million cumulative deferred tax asset at December 31, 2002, primarily related to net operating loss and tax credit carryforwards. We have taken some valuation allowances with respect to certain capital loss and foreign tax credit carryforwards, but have taken no valuation allowances with respect to other deferred tax assets because we believe it is more likely than not that the deferred tax assets on the books will be fully realized.

Net Loss. In 2002, we recorded a net loss of \$17.0 million, or \$0.79 per diluted share, compared to a net loss of \$17.8 million, or \$0.83 per diluted share, in 2001. The ISD segment recorded a net loss of \$3.9 million, or \$0.18 per share, in 2002 compared to a net loss of \$3.7 million, or \$0.17 per share, in 2001. The increased loss was the result of allocating 50%, or \$1.7 million, of the net other income to the Microdisplay segment compared to 0% allocated in 2001. Offsetting this loss of income was a cost-reduction effort that improved our gross margins. The loss on the sale of our LCD line offset some, but not all, of these cost reductions. The Microdisplay segment recorded a net loss of \$13.1 million, or \$0.61 per diluted share, in 2002 compared to a net loss of \$14.1 million, or \$0.66 per diluted share, in 2001. The decreased loss was the result of allocating 50%, or \$1.7 million, of the net other income to the Microdisplay segment compared to 0% allocated in 2001.

Year ended December 31, 2001 compared to year ended December 31, 2000

Net Sales. Net sales decreased 25.9% to \$119.1 million in 2001 from \$160.7 million in 2000. Although some of the decrease was attributable to the reduced volume of unit shipments, the revenue decrease was primarily the result of decreased selling prices of LCD modules due to excess worldwide LCD capacity. We shipped 13.0 million units in 2001 versus 14.9 million units in 2000.

Cost of Sales. Cost of sales increased to 102.0% of net sales in 2001 from 77.6% in 2000. This percentage increase resulted primarily from reduced selling prices and reduced operating efficiencies. Also contributing to the increased cost of sales was the sale of LCoS microdisplay products at a loss. We incurred a loss at the gross margin line for our LCoS microdisplay sales primarily because of very low manufacturing yields.

Selling, General, and Administrative Expense. Selling, general, and administrative expense increased 6.3% to \$10.1 million in 2001 from \$9.5 million in 2000. Selling, general, and administrative expense was 8.5% of net sales in 2001 compared to 5.9% of net sales in 2000. This percentage increase was due to lower net sales in 2001.

Research, Development, and Engineering Expense. Research, development, and engineering expense increased 32.3% to \$17.6 million in 2001 from \$13.3 million in 2000. Research, development, and engineering expense were 14.8% of net sales in 2001 compared to 8.3% of net sales in 2000. Research, development, and engineering expense overall increased as the result of the continued development of LCoS microdisplays.

The selling, general, and administrative expense and the research, development, and engineering expense in each year included significant operating expenditures in LCoS microdisplays at a time when there was very little LCoS microdisplay revenue. In 2001, we incurred approximately \$13.5 million of operating expenses specifically related to LCoS microdisplays compared to approximately \$9.4 million in 2000.

Other Income (Expense), Net. Other income in 2001 was \$3.4 million compared to other income of \$7.2 million in 2000. The primary difference was the 2001 write-off of our \$3.8 million investment in Inviso, Inc. Net interest earned in 2001 was \$7.3 million compared to \$7.4 million in 2000.

Provision for (Benefit from) Income Taxes. We recorded a benefit from income taxes of \$8.7 million in 2001 compared to a provision for income taxes of \$5.5 million in 2000. In recording the benefit, we used an effective tax rate of 33.0% in 2001 compared to an effective tax rate of 27.1% in 2000. The difference was primarily a change in relative operational results between U.S. and foreign jurisdictions and a higher percentage of research and development credits recorded during 2000.

Net Income (Loss). In 2001, we recorded a net loss of \$17.8 million, or \$0.83 per diluted share, compared to net income of \$14.8 million, or \$0.69 per diluted share, in 2000. We recorded several unusual expense items in the second quarter of 2001, including the \$3.8 million write-off of our investment in Inviso, Inc., the \$2.4 million write-off of certain inventory, and the \$1.3 million write-off of an Enterprise Resource Planning system implementation. On an after-tax basis, those unusual expenses totaled \$5.1 million, or \$0.24 per diluted share. The ISD segment recorded a net loss of \$3.7 million, or \$0.17 loss per diluted share, in 2001 compared to net income of \$20.9 million, or \$0.97 earnings per share in 2000. The decline in revenue was related to intense pricing pressures for our modules and the worldwide economic slowdown in 2001. The microdisplay segment recorded a net loss of \$14.1 million, or \$0.66 per diluted share, in 2001 compared to a net loss of \$6.1 million, or \$0.28 per diluted share, in 2000. The increased loss was as a result of intensified RD&E efforts to bring microdisplays to market.

Liquidity and Capital Resources

At December 31, 2002, we had cash, cash equivalents, and short- and long-term liquid investments of \$80.6 million compared to \$156.1 million at December 31, 2001.

In 2002, we had \$10.2 million in net cash outflow from operations compared to \$4.1 million in net cash outflow from operations in 2001. Excluding inventory and DSO (Days Sales Outstanding) data related to our ETMA acquisition, our inventory turns were 6.4 and DSOs were 62 days for the year 2002 as compared with 6.7 inventory turns and 64 DSOs for the year 2001. Our depreciation and amortization expense was \$6.0 million in 2001 and \$7.4 million in 2002.

Our working capital was \$107.9 million at December 31, 2002, down from \$169.1 million at December 31, 2001. The decrease in working capital was primarily because of reduced cash balances as a result of operating cash outflows and acquisitions. Our current ratio at December 31, 2002 was 7.3-to-1 compared to 8.8-to-1 at December 31, 2001.

In May 2002, we renegotiated our credit facility with Comerica Bank. That credit facility is a \$15.0 million unsecured revolving line of credit that matures in July 2003. No borrowings were outstanding under that credit facility on December 31, 2002. Advances under the facility may be made as prime rate advances, which accrue interest payable monthly at the bank's prime lending rate, or as LIBOR rate advances, which bear interest at 150 basis points in excess of the LIBOR base rate. In May 2002, our Beijing subsidiary renewed its credit facility with the Bank of China. As of December 31, 2002, our Beijing subsidiary had an outstanding \$2.7 million term loan due April 30, 2003 to the Bank of China, which was secured by a \$3.0 million standby letter of credit issued by Comerica Bank.

Acquisitions, investments, and purchases of intangibles, property, plant, and equipment during 2002 were approximately \$65.8 million, including \$4.6 million in capital expenditures, mainly associated with microdisplays, \$6.0 million in intangibles associated with microdisplays, \$5.1 million invested in ColorLink, and \$50.1 million in acquisitions with ETMA and AVT. During 2002, we purchased 260,600 shares of common stock for a total purchase price of \$1.4 million, including 145,400 shares in the fourth quarter for \$717,000.

The following tables list our contractual obligations and commercial commitments:

Contractual Obligations (in thousands)	Total Amounts Committed	Payments due by Period			
		Less than 1 Year	1-3 Years	4-5 Years	6 Years and Over
Term Loan	\$ 2,734	\$ 2,714	\$ 15	\$ 5	\$ -
Operating Leases	<u>22,959</u>	<u>3,646</u>	<u>5,641</u>	<u>3,534</u>	<u>10,138</u>
Total Contractual Cash Obligations	<u>\$ 25,693</u>	<u>\$ 6,360</u>	<u>\$ 5,656</u>	<u>\$ 3,539</u>	<u>\$ 10,138</u>

Other Commercial Commitments (in thousands)	Total Amounts Committed	Amount of Commitment Expiration Per Period			
		Less than 1 Year	1-3 Years	4-5 Years	6 Years and Over
Guarantee	\$ 428	\$ 92	\$ 203	\$ 133	-

The term loan includes a \$2.7 million loan from the Bank of China and it includes an interest-free vehicle financing of \$28,000.

The operating leases include a lease for our factory in Manila and our ground lease in Tempe, Arizona. These leases are described in detail in Note 8 of the Notes to our Consolidated Financial Statements for 2002 included elsewhere in this Form 10-K. The guarantee relates to our guarantee in connection with a Small Business Administration loan to VoiceViewer Technology, Inc., a private company developing microdisplay products. The \$3.0 million standby letter of credit issued by Comerica has not been included in the Other Commercial Commitments table because it only exists to secure the term loan obligation of \$2.7 million, which is already included in the table for Contractual Obligations.

In September 2002, we purchased the assets and ongoing business of AVT. The purchase agreement calls for a residual purchase payment of \$2.0 million should the AVT division achieve certain revenue and profit objectives for 2002 and 2003.

In January 2003, we signed licensing and manufacturing agreements with Data International Co., Ltd. of Taiwan. The cost of the license is anticipated to be \$4.0 million of which \$1.0 million was paid upon signing and the other \$3.0 million is due over the next two years. The unpaid \$3.0 million is subject to reduction if certain revenue and margin targets are not met.

We have no other long-term debt, capital lease obligations, unconditional purchase obligations, or other long-term obligations, and we do not have any other commercial commitments or other off-balance sheet arrangements.

We believe that our existing balances of cash, cash equivalents, and investments will provide adequate sources to fund our operations and planned expenditures through 2003 and 2004, as well as to meet our contractual obligations. Specifically, we have over \$80 million in cash, cash equivalents, and short-term investments. Our capital expenditures for 2003 are expected to be less than \$10.0 million, and we expect operating cash outflow to consume only a small portion of our cash reserves. We continue to seek other alliances or acquisitions and additional relationships with regard to the strategic development of both business segments. New acquisitions or alliances may result in our needing to expand our loan commitments or pursue alternate methods of financing or raise capital. We cannot provide assurance that adequate additional loan commitments or alternative methods of financing will be available or, if available, that they will be on terms acceptable to us.

Impact of Recently Issued Standards.

In September 2001, the FASB issued SFAS No. 141, "Business Combinations," and SFAS No. 142, "Goodwill and Other Intangible Assets." SFAS No. 141 requires companies to apply the purchase method of

accounting for all business combinations initiated after June 30, 2001 and prohibits the use of the pooling-of-interest method. SFAS No. 142 requires identifiable intangible assets to be recognized separately from goodwill. In addition, it eliminates the amortization of all existing and newly acquired goodwill on a prospective basis and requires companies to assess goodwill for impairment, at least annually, based on the fair value of the reporting unit. We adopted SFAS Nos. 141 and 142 on January 1, 2002, and there was no material impact on our financial position or results of operations.

In August 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." SFAS No. 144 supersedes SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of," and the accounting and reporting provisions of APB Opinion No. 30, "Reporting the Results of Operations — Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions." SFAS No. 144 modifies the method in which companies account for certain asset impairment losses. We adopted SFAS No. 144 on January 1, 2002 and there was no material impact on our financial position or results of operations.

In July 2001, the FASB issued SFAS No. 146, "Accounting for Costs Associated with Exit or Disposal Activities." SFAS No. 146 requires companies to recognize costs associated with exit or disposal activities when they are incurred rather than at the date of a commitment to an exit or disposal plan. SFAS No. 146 replaces EITF Issue No. 94-3, "Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity (including Certain Costs Incurred in a Restructuring)," and will apply to exit or disposal activities initiated after December 31, 2002. We have reviewed the requirements of SFAS No. 146 and believe the adoption of this statement will not have a material impact on our financial statements.

In December 2002, the FASB issued SFAS No. 148, "Accounting for Stock-Based Compensation - Transition and Disclosure". This Statement amends SFAS No. 123 to provide alternative methods of transition for a voluntary change to the fair value method of accounting for stock-based employee compensation. Specifically, SFAS No. 148 prohibits companies from utilizing the prospective method of transition, the only method offered under the original SFAS No. 123, in fiscal years beginning after December 15, 2003. However, the statement permits two additional transition methods for companies that adopt the fair value method of accounting for stock-based compensation, which include the modified prospective and retroactive restatement methods. Under the prospective method, expense is recognized for all employee awards granted, modified, or settled after the beginning of the fiscal year in which the recognition provisions are first applied. The modified prospective method recognizes stock-based employee compensation cost from the beginning of the fiscal year in which the provisions are first applied, as if the fair value method had been used to account for all employee awards granted, modified, or settled in fiscal years beginning after December 15, 1994. Under the retroactive restatement method, all periods presented are restated to reflect stock-based employee compensation cost under the fair value method for all employee awards granted, modified, or settled in fiscal years beginning after December 15, 1994. In addition, this Statement amends the disclosure requirements of SFAS No. 123 to require prominent disclosures in both annual and interim financial statements about the method of accounting for stock-based employee compensation and the effect of the method used on reported results using a prescribed tabular format and requiring disclosure in the "Summary of Significant Accounting Policies" or its equivalent. We have adopted the new disclosure requirements for 2002, and are currently evaluating the impact if we were to adopt the fair value method of accounting for stock-based employee compensation under all three methods.

In November 2002, the FASB issued FASB Interpretation No. 45 (FIN 45), "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others." This Interpretation addresses the disclosures to be made by a guarantor in its financial statements and its obligations under guarantees. The Interpretation also clarifies the requirements related to the recognition of a liability by the guarantor at the inception of a guarantee. Per the interpretation, initial recognition of a liability shall be applied only on a prospective basis to guarantees issued or modified after December 31, 2002. We have reviewed the requirements of FIN 45 and believe the adoption of this interpretation will not have a material impact on our financial statements.

Rule 10b5-1 Trading Plans

Our Insider Trading Policy permits our directors, officers, and other key personnel to establish purchase and sale programs in accordance with Rule 10b5-1 adopted by the Securities and Exchange Commission. The rule permits employees to adopt written plans at a time before becoming aware of material nonpublic information and to sell shares according to a plan on a regular basis (for example, weekly or monthly), regardless of any subsequent nonpublic information they receive. In our view, Rule 10b5-1 plans are beneficial because systematic, pre-planned sales that take place over an extended period should have a less disruptive influence on the price of our stock. We also believe plans of this type are beneficial because they inform the marketplace about the nature of the trading activities of our directors and officers. In the absence of such information, the market could mistakenly attribute transactions as reflecting a lack of confidence in our company or an indication of an impending event involving our company. We recognize that our directors and officers may have reasons totally apart from the company in determining to effect transactions in our common stock. These reasons could include the purchase of a home, tax and estate planning, the payment of college tuition, the establishment of a trust, the balancing of assets, or other personal reasons. The establishment of any trading plan involving our company requires the pre-clearance by our Chief Executive Officer or Chief Financial Officer. An individual adopting a trading plan must comply with all requirements of Rule 10b5-1, including the requirement that the individual not possess any material nonpublic information regarding our company at the time of the establishment of the plan. In addition, sales under a trading plan may be made no earlier than 30 days after the plan establishment date.

No officers currently maintain trading plans.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Derivative Financial Instruments, Other Financial Instruments, and Derivative Commodity Instruments

At December 31, 2002, we did not participate in any derivative financial instruments, or other financial and commodity instruments for which fair value disclosure would be required under Statement of Financial Accounting Standards No. 107. We hold no investment securities that would require disclosure of market risk.

We have certain receivables denominated in Chinese renminbi. To eliminate our exposure to changes in the U.S. dollar/Chinese renminbi exchange rate, we have entered into forward contracts to protect future cash flows. We have designated the forward contracts as cash flow hedges. Accordingly, we account for changes in the fair value of our forward contracts, based on changes in the forward exchange rate, with all changes in fair value reported in other comprehensive income. Amounts in other comprehensive income will be reclassified into earnings upon settlement of the forward contract. As of December 31, 2002, we had no forward contracts outstanding.

Primary Market Risk Exposures

Our primary market risk exposures are in the areas of interest rate risk and foreign currency exchange rate risk. We have a revolving line of credit with a variable interest rate of LIBOR (1.48% at December 31, 2002) plus 150 basis points. At December 31, 2002, no borrowings were outstanding under this line of credit.

We generally sell our products and services and negotiate purchase orders with our foreign suppliers in U.S. dollars. However, we have certain foreign currency exchange exposure as a result of our manufacturing operations in the Philippines and China and our sales and distribution facility in the United Kingdom. We have not incurred any material exchange gains or losses to date. Some of the expenses of these foreign operations are denominated in the Philippine peso, Chinese renminbi, and British pound sterling, respectively. These expenses include local salaries and wages, utilities, and some operating supplies. As a result of these sales and expenses, we do have accounts receivable and cash deposits in local currencies. We believe, however, that the operating expenses currently incurred in foreign currencies other than the Chinese renminbi are immaterial, and therefore any associated market risk is unlikely to have a material adverse effect on our business, results of operations, or financial condition. Although the Chinese currency currently is stable, its value in relation to the U.S. dollar is determined by the Chinese government. There is general speculation that China may devalue its currency. Devaluation of the Chinese currency could result in translation adjustments to our balance sheet as well as reportable losses depending on our monetary balances and outstanding indebtedness at the time of devaluation. The government of China historically has made it difficult to convert its local currency into foreign currencies. Although we from time to time may enter

into hedging transactions in order to minimize our exposure to currency rate fluctuations, the Chinese currency is not freely traded and thus is difficult to hedge. In addition, the government of China has imposed restrictions on Chinese currency loans to foreign-operated entities in China. Based on the foregoing, we cannot provide assurance that fluctuations and currency exchange rates in the future will not have an adverse effect on our operations.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Reference is made to the financial statements, the reports thereon, the notes thereto, and the supplementary data commencing at page F-1 of this report, which financial statements, reports, notes, and data are incorporated herein by reference.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The information required by this Item relating to our directors is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2003 Annual Meeting of Stockholders. The information required by this Item relating to our executive officers is included in Item 1, "Business – Executive Officers" of this report.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2003 Annual Meeting of Stockholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2003 Annual Meeting of Stockholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The information required by this Item is incorporated herein by reference to the definitive Proxy Statement to be filed pursuant to Regulation 14A of the Exchange Act for our 2003 Annual Meeting of Stockholders.

ITEM 14. CONTROLS AND PROCEDURES

As of a date within 90 days prior to the date of filing of this report, our Chief Executive Officer and Chief Financial Officer have reviewed and evaluated the effectiveness of our disclosure controls and procedures, which included inquiries made to certain other of our employees. Based on their evaluation, our Chief Executive Officer and Chief Financial Officer have each concluded that our disclosure controls and procedures are effective and sufficient to ensure that we record, process, summarize, and report information required to be disclosed by us in our periodic reports filed under the Securities Exchange Act within the time periods specified by the Securities and Exchange Commission's rules and forms. Subsequent to the date of their evaluation, there have not been any significant changes in our internal controls or in other factors that could significantly affect these controls, including any corrective action with regard to significant deficiencies and material weaknesses.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K

(a) Financial Statements and Financial Statement Schedule

- (1) Financial Statements are listed in the Index to Financial Statements on page F-1 of this report.
- (2) Financial Statement Schedule:

Schedule II Valuation and Qualifying Accounts and Reserves is set forth on page S-1 of this report.

Other schedules are omitted because they are not applicable, not required, or because the required information is included in the consolidated financial statements or notes thereto.

(b) Reports on Form 8-K

None.

(c) Exhibits

<u>Exhibit Number</u>	<u>Exhibits</u>
2	Amended and Restated Agreement and Plan of Reorganization(1)
3(i)(a)	Amended and Restated Certificate of Incorporation of the Company(2)
3(i)(b)	Certificate of Amendment of Restated Certificate of Incorporation(3)
3(i)(c)	Certificate of Designation of Series A Junior Participating Preferred Stock(4)
3(ii)	Amended and Restated Bylaws of the Company(5)
4.1	Form of Certificate of Common Stock*
4.2	Rights Agreement, dated as of April 26, 2001, between Three-Five Systems, Inc. and Bank of New York, as Rights Agent(6)
10.1	Line of Credit Agreement between Three-Five Systems Limited and Barclays Bank, PLC(7)
10.2	Ground Sublease dated April 1, 1994, between Papago Park Center, Inc. and Three-Five Systems, Inc.(8)
10.3	Amended and Restated 1990 Incentive Stock Option Plan (as Amended and Restated through March 7, 2003)*
10.4	Amended and Restated 1993 Stock Option Plan (as Amended and Restated through March 7, 2003)*
10.5	Amended and Restated 1994 Stock Option Plan for Non-Employee Directors (as Amended and Restated through February 12, 2001)(9)
10.6	Amended and Restated 1997 Employee Stock Option Plan (as Amended and Restated through November 27, 2002)*
10.7	Form of Notice and Acceptance of Stock Option Grant for Amended and Restated 1997 Employee Stock Option Plan(10)
10.8	Amended and Restated 1998 Stock Option Plan* (as Amended and Restated through February 8, 2002)
10.9	Amended and Restated Director's Stock Plan (amended as of January 27, 2000)(11)
10.10	401(k) Profit Sharing Plan(12)
10.11	Credit Agreement dated January 21, 2000, by and among Three-Five Systems, Inc., its subsidiaries, the Banks named therein, and Imperial Bank Arizona, as Agent and as Issuing Bank(13)
10.12	Modification Agreement dated February 1, 2001, by and among Three-Five Systems, Inc., its subsidiaries, the Banks named in the Credit Agreement, and Imperial Bank as Agent and as Issuing Bank(14)
10.13	Second Modification Agreement dated September 30, 2001, by and among Three-Five Systems, Inc., its subsidiaries, the Banks named in the Credit Agreement, and Comerica Bank-California as Agent and as Issuing Bank*
10.14	Third Modification Agreement dated January 31, 2002, by and among Three-Five Systems,

	Inc., its subsidiaries, the Banks named in the Credit Agreement, and Comerica Bank-California as Agent and as Issuing Bank(15)
10.15	Technology License Agreement between Data International, Ltd. and TFS-DI dated January 13, 2003*
10.16	Supply Agreement between Data International, Ltd. and TFS-DI dated January 13, 2003*
10.17	Term Promissory Note dated January 13, 2003 executed by TFS-DI in favor of Data International, Ltd.*
21	List of Subsidiaries*
23.1	Consent of Deloitte & Touche LLP*
23.2	Notice Regarding Consent of Arthur Andersen LLP*
99.1	Certification of the Chief Executive Officer of the Registrant, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
99.2	Certification of the Chief Financial Officer of the Registrant, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*

*Filed herein.

- (1) Incorporated by reference to Exhibit 2 to the Registration Statement on Form S-4 of TF Consolidation, Inc. (Registration No. 33-33944) as filed on March 27, 1990.
- (2) Incorporated by reference to Exhibit 3(a) to the Registrant's Form 10-QSB for the quarter ended March 31, 1994, as filed on or about May 12, 1994.
- (3) Incorporated by reference to Exhibit 3(b) to the Registration Statement on Form S-3 (Registration No. 333-35788) as filed on April 27, 2000, as amended by Form S-3/A as filed on May 5, 2000.
- (4) Incorporated by reference to Exhibit 3(d) to the Registrant's Form 8-A as filed on May 10, 2001.
- (5) Incorporated by reference to Exhibit 3(b) to the Registration Statement on Form S-3 (Registration No. 333-84083) as filed on July 30, 1999, as amended by Form S-3/A as filed on August 26, 1999.
- (6) Incorporated by reference to Exhibit 4(b) to the Registrant's Form 8-A as filed on May 10, 2001.
- (7) Incorporated by reference to Exhibit 10(c) to the Registration Statement on Form S-4 of TF Consolidation, Inc. (Registration No. 33-33944) as filed on March 27, 1990.
- (8) Incorporated by reference to Exhibit 10(o) to the Registrant's Form 10-K for the fiscal year ended December 31, 1996, as filed on March 14, 1997.
- (9) Incorporated by reference to Exhibit 10(x) to the Registrant's Form 10-Q for the quarter ended June 30, 2001, as filed on July 27, 2001.
- (10) Incorporated by reference to Exhibit 10.5(b) to the Registration Statement on Form S-8 (Registration No. 333-59234) as filed on April 19, 2001.
- (11) Incorporated by reference to Exhibit 10(y) to the Registration Station Statement on Form S-8 (Registration No. 333-50689) as filed on November 3, 2000.
- (12) Incorporated by reference to Exhibit 10(z) to the Registration Statement on Form S-8 (Registration No. 333-57933) as filed on June 26, 1998.
- (13) Incorporated by reference to Exhibit 10(aa) to the Registrant's Form 10-Q for the quarter ended June 30, 2000, as filed on July 27, 2000.
- (14) Incorporated by reference to Exhibit 10(cc) to the Registrant's Form 10-K for the fiscal year ended December 31, 2000, as filed on March 13, 2001.
- (15) Incorporated by reference to Exhibit 10(cc) to the Registrant's Form 10-Q for the quarter ended March 31, 2002, as filed on April 19, 2002.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

THREE-FIVE SYSTEMS, INC.

Date: March 28, 2003

By: /s/ Jack L. Saltich

Jack L. Saltich

President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Jack L. Saltich</u> Jack L. Saltich	President, Chief Executive Officer (Principal Executive Officer), and Director	March 28, 2003
<u>/s/ Jeffrey D. Buchanan</u> Jeffrey D. Buchanan	Executive Vice President, Chief Financial Officer, Secretary, Treasurer (Principal Financial and Accounting Officer), and Director	March 28, 2003
<u>/s/ David C. Malmberg</u> David C. Malmberg	Chairman of the Board of Directors	March 28, 2003
<u>/s/ Kenneth M. Julien</u> Kenneth M. Julien	Director	March 28, 2003
<u>/s/ David P. Chavoustie</u> David P. Chavoustie	Director	March 28, 2003
<u>/s/ Murray A. Goldman</u> Murray A. Goldman	Director	March 28, 2003
<u>/s/ Henry L. Hirvela</u> Henry L. Hirvela	Director	March 28, 2003
<u>/s/ Thomas H. Werner</u> Thomas H. Werner	Director	March 28, 2003

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, Jack L. Saltich, certify that:

1. I have reviewed this annual report on Form 10-K of Three-Five Systems, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations, and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:
 - a) Designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) Evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the Evaluation Date); and
 - c) Presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize, and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officer and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 28, 2003

/s/ Jack L. Saltich

Jack L. Saltich

President and Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, Jeffrey D. Buchanan, certify that:

1. I have reviewed this annual report on Form 10-K of Three-Five Systems, Inc.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations, and cash flows of the registrant as of, and for, the periods presented in this annual report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:
 - a) Designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
 - b) Evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the Evaluation Date); and
 - c) Presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize, and report financial data and have identified for the registrant's auditors any material weaknesses in internal controls; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officer and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

Date: March 28, 2003

/s/ Jeffrey D. Buchanan
Jeffrey D. Buchanan
Chief Financial Officer, Secretary, and Treasurer

THREE-FIVE SYSTEMS, INC. AND SUBSIDIARIES
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INDEPENDENT AUDITORS' REPORT

To the Stockholders and Board of Directors of Three-Five Systems, Inc.:

We have audited the accompanying consolidated balance sheet of Three-Five Systems, Inc. and subsidiaries as of December 31, 2002, and the related consolidated statements of operations, stockholders' equity, comprehensive income (loss) and cash flows for the year then ended. Our audit also included the 2002 financial statement schedule listed in the Index. These financial statements and the financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on the 2002 financial statements and the financial statement schedule based on our audit. The financial statements and financial statement schedule as of December 31, 2001, and for each of the years in the two-year period then ended, were audited by other auditors who have ceased operations. Those auditors expressed an unqualified opinion on those financial statements and stated that such 2001 and 2000 financial statement schedules, when considered in relation to the 2001 and 2000 basic financial statements taken as a whole, present fairly, in all material respects, the information set forth therein, in their report dated January 20, 2002.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the 2002 consolidated financial statements present fairly, in all material respects, the financial position of Three-Five Systems, Inc. and subsidiaries as of December 31, 2002, and the results of their operations and their cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the 2002 financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

/s/ DELOITTE & TOUCHE LLP

Phoenix, Arizona
February 3, 2003, except for Note 11,
as to which the date is March 17, 2003.

NOTE: The report of Arthur Andersen LLP presented below is a copy of a previously issued Arthur Andersen LLP report. This report has not been reissued by Arthur Andersen LLP, nor has Arthur Andersen LLP provided a consent to the inclusion of its report in this Form 10-K.

REPORT OF INDEPENDENT PUBLIC ACCOUNTANTS

To Three-Five Systems, Inc.:

We have audited the accompanying consolidated balance sheets of THREE-FIVE SYSTEMS, INC. (the Company) (a Delaware corporation) and subsidiaries as of December 31, 2000 and 2001, and the related consolidated statements of operations, stockholders' equity, comprehensive income (loss) and cash flows for each of the three years in the period ended December 31, 2001. These financial statements and the schedule referred to below are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company and subsidiaries as of December 31, 2000 and 2001, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2001, in conformity with accounting principles generally accepted in the United States.

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole. The schedule listed on the Index to Consolidated Financial Statements is presented for purposes of complying with the Securities and Exchange Commission's rules and is not part of the basic financial statements. This schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, fairly states in all material respects the financial data required to be set forth therein in relation to the basic financial statements taken as a whole.

/s/ ARTHUR ANDERSEN LLP

Phoenix, Arizona
January 21, 2002

THREE-FIVE SYSTEMS, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(in thousands, except share data)

	December 31,	
	2001	2002
ASSETS		
Current Assets:		
Cash and cash equivalents	\$ 37,003	\$ 18,389
Short-term investments	110,016	62,178
Accounts receivable, net	18,102	16,970
Inventories	15,629	19,876
Income taxes receivable	3,960	561
Deferred income tax asset	3,930	3,561
Assets held for sale	-	841
Other current assets	2,104	2,507
Total current assets	190,744	124,883
Long-term Investments	9,034	-
Property, Plant and Equipment, net	38,353	31,563
Intangibles, net	5,886	14,919
Goodwill	-	34,901
Long-term Deferred Income Tax Asset	219	9,642
Other Investments	1,250	6,331
Other Assets	402	455
	\$ 245,888	\$ 222,694
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Accounts payable	\$ 14,785	\$ 8,760
Accrued liabilities	4,130	5,166
Deferred revenue	-	358
Term loan	2,706	2,714
Total current liabilities	21,621	16,998
Long-term Debt	-	20
Other Long-term Liabilities	-	8
Commitments and Contingencies (Note 8)		
Minority Interest in Consolidated Subsidiary	323	-
Stockholders' Equity:		
Preferred stock, \$.01 par value; 1,000,000 shares authorized, no shares issued or outstanding	-	-
Common stock, \$.01 par value; 60,000,000 shares authorized, 21,894,628 and 21,937,356 shares issued at December 31, 2001 and 2002, respectively	219	219
Additional paid-in capital	200,395	200,763
Retained earnings	30,666	13,695
Stock subscription note receivable	(163)	(174)
Accumulated other comprehensive loss	(21)	(332)
Less - Treasury stock, at cost, 390,717 shares at December 31, 2001 and 651,317 shares at December 31, 2002	(7,152)	(8,503)
Total stockholders' equity	223,944	205,668
	\$ 245,888	\$ 222,694

The accompanying notes are an integral part of these consolidated balance sheets.

THREE-FIVE SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Years Ended December 31,		
	2000	2001	2002
Net Sales	\$ 160,684	\$ 119,136	\$ 88,026
Costs and Expenses:			
Cost of sales	124,724	121,514	85,133
Selling, general and administrative	9,501	10,130	11,324
Research, development and engineering	13,295	17,618	17,968
Write-down of assets held for sale	-	-	4,545
Amortization of customer lists	-	-	256
	<u>147,520</u>	<u>149,262</u>	<u>119,226</u>
Operating income (loss)	<u>13,164</u>	<u>(30,126)</u>	<u>(31,200)</u>
Other Income (Expense):			
Interest, net	7,374	7,266	3,328
Loss on investment in start-up company	-	(3,820)	-
Other, net	<u>(190)</u>	<u>4</u>	<u>164</u>
	<u>7,184</u>	<u>3,450</u>	<u>3,492</u>
Minority Interest in Loss of Consolidated Subsidiary	-	167	84
Income (Loss) before Income Taxes	20,348	(26,509)	(27,624)
Provision for (benefit from) income taxes	<u>5,514</u>	<u>(8,745)</u>	<u>(10,653)</u>
Net Income (Loss)	<u>\$ 14,834</u>	<u>\$ (17,764)</u>	<u>\$ (16,971)</u>
Earnings (Loss) Per Common Share:			
Basic	<u>\$ 0.73</u>	<u>\$ (0.83)</u>	<u>\$ (0.79)</u>
Diluted	<u>\$ 0.69</u>	<u>\$ (0.83)</u>	<u>\$ (0.79)</u>
Weighted Average Number of Common Shares:			
Basic	<u>20,457</u>	<u>21,401</u>	<u>21,465</u>
Diluted	<u>21,636</u>	<u>21,401</u>	<u>21,465</u>

The accompanying notes are an integral part of these consolidated financial statements.

THREE-FIVE SYSTEMS, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

For the Years Ended December 31, 2000, 2001 and 2002

(in thousands, except share data)

	Common Stock		Additional	Retained	Stock	Accumulated Other	Treasury	Total
	Shares Issued	Amount	Paid-in Capital	Earnings	Subscription Note Receivable	Comprehensive Income (Loss)	Stock	Stockholders' Equity
Balance, December 31, 1999.....	18,859,138	\$ 189	\$ 67,388	\$ 33,639	\$ -	\$ 7	\$ (3)	\$ 101,220
Net income.....	-	-	-	14,834	-	-	-	14,834
Foreign currency translation adjustments.....	-	-	-	-	-	(241)	-	(241)
Stock options exercised.....	222,126	2	1,477	-	-	-	-	1,479
Warrants exercised, net.....	102,014	1	-	-	-	-	-	1
Tax benefit on stock option exercises.....	-	-	674	-	-	-	-	674
Purchase of treasury stock.....	-	-	-	-	-	-	(4,623)	(4,623)
Sale of common stock, net of offering expenses.....	2,472,500	25	128,676	(43)	-	-	-	128,658
Balance, December 31, 2000.....	21,655,778	217	198,215	48,430	-	(234)	(4,626)	242,002
Net loss.....	-	-	-	(17,764)	-	-	-	(17,764)
Unrealized gains on investments.....	-	-	-	-	-	260	-	260
Foreign currency translation adjustments.....	-	-	-	-	-	(47)	-	(47)
Stock subscription note receivable.....	-	-	410	-	(163)	-	-	247
Stock options exercised and other.....	238,850	2	1,182	-	-	-	-	1,184
Tax benefit on stock option exercises.....	-	-	588	-	-	-	-	588
Purchase of treasury stock.....	-	-	-	-	-	-	(2,526)	(2,526)
Balance, December 31, 2001.....	21,894,628	219	200,395	30,666	(163)	(21)	(7,152)	223,944
Net loss.....	-	-	-	(16,971)	-	-	-	(16,971)
Unrealized losses on investments.....	-	-	-	-	-	(197)	-	(197)
Foreign currency translation adjustments.....	-	-	-	-	-	(114)	-	(114)
Stock subscription note receivable.....	-	-	-	-	(11)	-	-	(11)
Stock options exercised and other.....	42,728	-	323	-	-	-	-	323
Tax benefit on stock option exercises.....	-	-	45	-	-	-	-	45
Purchase of treasury stock.....	-	-	-	-	-	-	(1,351)	(1,351)
Balance, December 31, 2002.....	21,937,356	\$ 219	\$200,763	\$ 13,695	\$ (174)	\$ (332)	\$ (8,503)	\$ 205,668

The accompanying notes are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
For the Years Ended December 31, 2000, 2001 and 2002
(in thousands)

	Years Ended December 31,		
	2000	2001	2002
Net Income (Loss)	\$ 14,834	\$ (17,764)	\$ (16,971)
Other Comprehensive Income (Loss), net of taxes:			
Unrealized gains (losses), net of tax expense			
(benefit) of \$129 and (\$96) as of			
years ended 2001 and 2002, respectively	-	260	(197)
Foreign currency translation adjustment	(241)	(47)	(114)
Comprehensive income (loss)	\$ <u>14,593</u>	\$ <u>(17,551)</u>	\$ <u>(17,282)</u>

The accompanying notes are an integral part of these consolidated financial statements.

THREE-FIVE SYSTEMS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Years Ended December 31,		
	2000	2001	2002
CASH FLOWS FROM OPERATING ACTIVITIES:			
Net income (loss).....	\$ 14,834	\$ (17,764)	\$ (16,971)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization.....	6,039	5,961	7,402
Stock compensation.....	-	-	104
Minority interest in consolidated subsidiary.....	-	(167)	(84)
Deferred revenue.....	-	-	358
Provision for (reduction of) accounts receivable valuation reserves.....	(311)	(180)	187
Write-down of assets held for sale.....	-	-	4,545
Loss on disposal of assets.....	74	1,371	-
Tax benefit on stock option exercises.....	674	588	45
Benefit from deferred taxes, net.....	(626)	(4,575)	(9,021)
Interest on officer loan.....	-	(10)	(11)
Loss on investment in start-up company.....	-	3,820	-
Changes in assets and liabilities:			
(Increase) decrease in accounts receivable.....	(2,438)	5,713	6,907
(Increase) decrease in inventories.....	(8,172)	4,887	8,733
(Increase) decrease in other assets.....	(941)	(339)	124
Increase (decrease) in accounts payable and accrued liabilities.....	(2,567)	506	(15,893)
Increase (decrease) in taxes payable/receivable.....	(497)	(3,914)	3,397
Net cash provided by (used in) operating activities.....	<u>6,069</u>	<u>(4,103)</u>	<u>(10,178)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:			
Purchase of property, plant and equipment.....	(8,279)	(6,843)	(4,631)
Proceeds from sale of asset.....	-	-	2,100
Purchase of intangibles.....	(528)	(1,474)	(5,992)
Purchase of investments.....	(738,888)	(222,619)	(102,591)
Proceeds from maturities of investments.....	614,428	228,289	159,233
Payments on stock subscription note receivable.....	-	257	-
Acquisitions.....	-	-	(50,089)
Other investments.....	(500)	(1,250)	(5,081)
Net cash used in investing activities.....	<u>(133,767)</u>	<u>(3,640)</u>	<u>(7,051)</u>
CASH FLOWS FROM FINANCING ACTIVITIES:			
Net proceeds from (payments on) notes payable to banks.....	2,706	-	-
Stock options and warrants exercised.....	1,480	1,184	210
Minority interest.....	-	490	(239)
Purchase of treasury stock.....	(4,623)	(2,526)	(1,351)
Net proceeds from equity offering.....	128,658	-	-
Net cash provided by (used in) financing activities.....	<u>128,221</u>	<u>(852)</u>	<u>(1,380)</u>
Effect of exchange rate changes on cash and cash equivalents.....	(241)	(47)	(5)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS.....	282	(8,642)	(18,614)
CASH AND CASH EQUIVALENTS, beginning of year.....	45,363	45,645	37,003
CASH AND CASH EQUIVALENTS, end of year.....	<u>\$ 45,645</u>	<u>\$ 37,003</u>	<u>\$ 18,389</u>
SUPPLEMENTAL CASH FLOW INFORMATION:			
Interest paid.....	<u>\$ 751</u>	<u>\$ 201</u>	<u>\$ 178</u>
Income taxes paid (refunded).....	<u>\$ 6,197</u>	<u>\$ (808)</u>	<u>\$ (5,088)</u>

The accompanying notes are an integral part of these consolidated financial statements.

THREE-FIVE SYSTEMS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

December 31, 2000, 2001 and 2002

(1) Organization and Operations:

We offer advanced design and manufacturing services to original equipment manufacturers, commonly referred to as OEMs. We have two business segments. The first segment is referred to as the Integrated Systems and Displays, or ISD. In that segment, we focus on display products and our electronic manufacturing services. We specialize in custom and standard display modules utilizing various display technologies, including liquid crystal displays, LCDs, organic light emitting displays, or OLEDs, and cathode ray tubes, or CRTs. Our display modules are of varying sizes and have varying levels of integration. At a minimum, each display module includes a display, a custom driver, and a flexible connector. We also provide ruggedized and customized monitors. We also provide value-added services, which increase our competitiveness, by assembling additional components onto the module based upon the specific needs of the customer. These additional components may include such items as keypads, microphones, speakers, light guides, and optics. Late in 2002, we expanded the value-added manufacturing services we provide in the ISD segment through our acquisition of ETMA Corporation. As a result of that acquisition, we now provide printed circuit board assembly, or PCBA, and box build capabilities to customers, even in products that do not need displays.

In our second business segment, referred to as the Microdisplay segment, we offer a range of LCoS product solutions with different levels of integration from individual images to optical light engines. The focused markets for our LCoS microdisplay products are large screen television sets, front projectors, and near-to-eye or personal display system applications.

Three-Five Systems Limited (Limited), a wholly owned subsidiary, is incorporated in the United Kingdom. Limited sells and distributes our products to customers on the European continent.

Three-Five Systems Pacific, Inc. (Pacific), a wholly owned Philippines corporation, manufactures our products.

Three-Five Systems (Beijing) Co., Ltd. (Beijing), a wholly owned subsidiary, manufactures and sells our products to customers primarily located in Asia.

ETMA Corporation (ETMA), a wholly owned subsidiary, is incorporated in Redmond, Washington and specializes in manufacturing services to OEMs.

(2) Summary of Significant Accounting Policies:

Principles of Consolidation and Preparation of Financial Statements

The consolidated financial statements include our accounts and those of our subsidiaries. All material intercompany transactions and balances have been eliminated.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an on-going basis, we evaluate our estimates and judgments, including those related to bad debts, inventories, investments, fixed assets, intangible assets, income taxes, pensions, and contingencies. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. The results form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from those estimates.

Concentration of Credit Risk

Our strategy involves concentrating our efforts on providing design and production services to leading companies in a limited number of fast-growing industries. We have been undertaking substantial efforts to diversify our business, broaden our customer base, and expand our markets. Product sales for our historical major customer, Motorola, accounted for approximately 87%, 85% and 77% of our net sales in 2000, 2001 and 2002, respectively. Sales to Motorola primarily consisted of mobile handset applications sold by our ISD operating segment. Since 2000, no other customer has accounted for more than 10% of our net sales. A significant decline in sales to Motorola is expected to occur in 2003 primarily as a result of our receiving no new design wins in 2001 or 2002 for Motorola's handset business.

The significant amount of sales to a few customers results in certain concentrations of credit risk for us. Our accounts receivable balance at December 31, 2000, 2001 and 2002 included 76%, 77%, and 27%, respectively, from Motorola. The significant drop in concentration was due to the much lower concentration of sales in the fourth quarter to Motorola (55%) and due to the acquisition of accounts receivable balances from the purchase of ETMA. The remaining accounts receivable balances are mainly related to customers from our ISD operating segment. These customers are located primarily in the United States, Asia, and Europe.

Fair Value of Financial Instruments

We have determined the estimated fair value of financial instruments using available market information and valuation methodologies. Estimating fair values requires considerable judgment. Accordingly, the estimates may not be indicative of amounts that would be realized in a current market exchange. The carrying values of cash, accounts receivable, and accounts payable approximate fair value due to the short maturities of these instruments. In addition, at December 31, 2002, the carrying amount on the term loan is estimated to approximate fair value as the actual interest rate is consistent with rates estimated to be currently available for debt with similar terms and remaining maturities.

Cash and Cash Equivalents

For purposes of the statements of cash flows, all highly liquid investments with an original maturity of three months or less are considered to be cash equivalents. Cash equivalents consist of investments in marketable debt securities, money market mutual funds, and U.S. government agencies' obligations. A portion of our funds held in money market mutual funds are invested in repurchase agreements. These repurchase agreements are collateralized by U.S. Treasury and Government obligations. Cash and cash equivalents at December 31 consists of the following (in thousands):

	December 31,	
	2001	2002
Cash and cash equivalents:		
Cash.....	\$ 6,992	\$ 12,513
Certificates of deposit	5,014	-
Money market	10,044	5,876
U.S. government agency securities	7,445	-
Corporate notes and bonds	<u>7,508</u>	<u>-</u>
	\$ <u>37,003</u>	\$ <u>18,389</u>

Accounts Receivable, net

Allowance for doubtful accounts was \$259,000 and \$446,000, as of December 31, 2001 and 2002, respectively.

Investments

Short-term investments have original maturities greater than three months and remaining maturities of less than one year. Debt securities with remaining maturities greater than one year are classified as long-term investments. All short-term and long-term investments are classified as available for sale and are presented at market value using

the specific identification method based on quoted market prices. Unrealized gains and losses are reflected in other comprehensive income. Realized gains and losses are included in results of operations. Short-term and long-term investments consist of the following at (in thousands):

	December 31,	
	2001	2002
Short-term investments:		
Certificates of deposit	\$ 14,970	\$ 11,498
Corporate notes and bonds	63,883	40,056
U.S. government agency securities	28,967	10,624
Commercial paper	2,196	-
	<u>\$ 110,016</u>	<u>\$ 62,178</u>

	December 31,	
	2001	2002
Long-term investments:		
Corporate notes and bonds	\$ 9,034	\$ -

Inventories

Inventories are stated at the lower of cost (first-in, first-out) or net realizable value and consist of the following at (in thousands):

	December 31,	
	2001	2002
Raw materials	\$ 11,535	\$ 13,428
Work-in-process	964	2,913
Finished goods	3,130	3,535
	<u>\$ 15,629</u>	<u>\$ 19,876</u>

We write down inventories for estimated obsolescence or unmarketable inventory to estimated market value based upon assumptions about future demand and market conditions. If actual market conditions are less favorable than those projected, then additional inventory write-downs may be required.

Property, Plant, and Equipment

Property, plant, and equipment is recorded at cost and is depreciated using the straight-line method over the estimated useful lives of the respective assets. Lives for the major asset categories are:

	Lives
Buildings	39 years
Building Improvements	15 – 38 years
Equipment	3 – 7 years
Furniture	5 – 10 years

Major additions and betterments are capitalized, while replacements, maintenance, and repairs that do not extend the useful lives of the assets are charged to operations as incurred. Depreciation expense totaled \$6,024,000, \$5,212,000, and \$5,443,000 for the years ended December 31, 2000, 2001, and 2002, respectively. Property, plant, and equipment consist of the following at (in thousands):

	December 31,	
	2001	2002
Building and improvements	\$ 16,476	\$ 16,476
Furniture and equipment.....	53,728	47,806
	70,204	64,282
Less accumulated depreciation	(31,851)	(32,719)
	<u>\$ 38,353</u>	<u>\$ 31,563</u>

In 1994, we conveyed our Tempe, Arizona, facility and certain improvements to the City of Tempe as consideration for a rent-free 75-year lease. We have the option to repurchase the facility for \$1,000 after ten years; therefore, the building lease is accounted for as a capital lease.

Other Investments

At December 31, 2002, other assets consist primarily of investments, at cost, in two start-up companies: ColorLink, Inc. for \$5.1 million and Silicon Bandwidth, Inc. for \$1.25 million.

In July 2002, we invested \$5.0 million in Series B Preferred Stock of ColorLink, Inc. which is convertible at anytime to common stock of ColorLink at a conversion price of \$10 per share. ColorLink develops and manufactures color management technologies for LCoS microdisplays. ColorLink's products consist of color management components and system architectures that are critical for digital projection systems that use high-resolution microdisplays. Those projection systems include color monitors, high-definition televisions and multi-media projectors. This investment furthers our efforts to accelerate as much as possible the establishment of the necessary infrastructure for LCoS microdisplays. Our investment in ColorLink is accounted for under the cost method as our ownership is less than 20% and we do not exert significant influence. An additional \$81,000 was recorded as investment in ColorLink during the third quarter of 2002 for legal and due diligence expenses.

In 2001, we invested \$1.25 million in Series B Preferred Stock of Silicon Bandwidth, Inc., a privately held company. We are working closely with Silicon Bandwidth to design unique, cost-effective, reconfigurable packaging platforms for LCoS microdisplays. Our investment in Silicon Bandwidth is accounted for under the cost method as our ownership is less than 20% and we do not exert significant influence.

In April 1998, we entered into a strategic relationship with Inviso, Inc., a privately held company with numerous patents and proprietary technology related to microdisplay development. We acquired a total minority equity interest in Inviso of approximately \$3.8 million. In the second quarter of 2001, we wrote off our investment of \$3.8 million in Inviso because we determined that our investment was impaired, as that term is defined under generally accepted accounting principles. Subsequent to our write-off, Inviso was unable to raise funds to operate its business and has since ceased operations. In the second quarter of 2002, we purchased all of the intellectual property of Inviso for \$780,000.

Intangibles

Intangibles consist of mask works, patents, licenses, customer lists and other intangible assets. Intangibles are recorded at cost and amortized using the straight-line method over the estimated useful lives of the respective assets, which range from two to five years. Our policy is to commence amortization of intangibles when their related benefits begin to be realized. In January 2002, we purchased the intellectual property of Zight Corporation, a private company focused on microdisplays for personal display system applications, for \$2.0 million. In April 2002, we purchased the intellectual property of Inviso, Inc. for \$780,000. In each case, the intellectual property purchased consisted of patents, patents pending, and patent disclosures. In September 2002, \$3.0 million was allocated to customer lists through the acquisition of AVT Advanced Video Technologies, of AVT, as described in Note 3. In December 2002, \$2.0 million was allocated to customer lists through the acquisition of ETMA Corporation, as described in Note 3. Intangible assets as of the year ended December 31, 2002 consist of the following (in thousands):

	Acquisition Value	Accumulated Amortization	Book Value
Amortized Intangible Assets:			
Mask works	\$ 6,242	\$ (1,655)	\$ 4,587
Patents and other intangible assets	3,431	-	3,431
Customer lists	5,000	(256)	4,744
Licenses	<u>2,954</u>	<u>(797)</u>	<u>2,157</u>
	\$ <u>17,627</u>	\$ <u>(2,708)</u>	\$ <u>14,919</u>

Intangible asset amortization expense for the year ended December 31, 2001 was \$749,000. This expense was all recognized as cost of sales as it was related to mask works on components purchased and production licenses employed to build and sell microdisplay units during 2001. Intangible asset amortization expense for the year ended December 31, 2002 was \$2.0 million. \$1.7 million of this expense was recognized as cost of sales as it was related to mask works on components purchased and production licenses employed to build and sell microdisplay units during 2002. \$256,000 of this expense was recorded as operating expenses under Amortization of Customer Lists as this amortization was related to intangible customer lists acquired during the acquisitions of AVT and ETMA.

Estimated annual amortization expense through 2007 and thereafter related to intangible assets reported as of December 31, 2002 is as follows (in thousands):

Fiscal Year	
2003.....	\$ 3,503
2004.....	3,846
2005.....	3,833
2006.....	2,552
2007.....	1,076
Thereafter	<u>109</u>
	\$ <u>14,919</u>

Evaluation of Long-Lived Assets with Definite Lives

In accordance with Financial Accounting Standards Board ("FASB") Statement of Financial Accounting Standards ("SFAS") No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets", we evaluate the recoverability of property, plant and equipment and intangibles with definite lives not held for sale by comparing the carrying amount of the asset or group of assets against the estimated undiscounted future cash flows expected to result from the use of the asset or group of assets and their eventual disposition. If the undiscounted cash flows are less than the carrying value of the asset or group of assets being evaluated, an impairment loss is recorded. These cash flows are evaluated for objectivity by using weighted probability techniques and also comparisons of past performance against projections. Assets may also be evaluated by identifying independent market values. The loss is measured as the difference between the fair value and carrying value of the asset or group of assets being evaluated. Assets to be disposed of are reported at the lower of the carrying amount or the fair value less cost to sell. The estimated fair value is based on the best information available under the circumstances, including prices for similar assets or the results of valuation techniques, including the present value of expected future cash flows using a discount rate commensurate with the risks involved.

Goodwill

Our goodwill consists of goodwill from the purchases of Advanced Video Technologies AVT and ETMA. The acquisition of AVT generated \$7.8 million of goodwill while the acquisition of ETMA created \$27.1 million of goodwill. See Note 3 for further explanations regarding the acquisitions.

Goodwill is analyzed for impairment, on at least an annual basis, or more frequently if events or change in circumstances indicate that the asset might be impaired. The impairment test consists of a comparison of the fair value of the goodwill to its carrying amount in accordance with SFAS No. 142, Goodwill and Other Intangible Assets.

Accrued Liabilities

Accrued liabilities include, among other things, accrued compensation of approximately \$2,000,000 and \$2,388,000 at December 31, 2001 and 2002, respectively.

Income Taxes

Financial Accounting Standards Board (FASB) Statement of Financial Accounting Standards (SFAS) No. 109, *Accounting for Income Taxes*, requires the use of an asset and liability approach in accounting for income taxes. Deferred tax assets and liabilities are recorded based on the differences between the financial statement and tax bases of assets and liabilities and the tax rates in effect when these differences are expected to reverse.

Foreign Currency Translation

Financial information relating to our foreign subsidiaries is reported in accordance with SFAS No. 52, *Foreign Currency Translation*. The functional currency of Pacific is the Philippine peso. The gain or loss resulting from the translation of Pacific's financial statements has been included as a separate component of stockholders' equity. Non-U.S. assets and liabilities are translated into U.S. dollars using the year-end exchange rates. Revenues and expenses are translated at average rates during the year.

The functional currency of Beijing is the Chinese renminbi. The gain or loss resulting from the translation of Beijing's financial statements has been included as a separate component of stockholders' equity. Non-U.S. assets and liabilities are translated into U.S. dollars using the year-end exchange rates. Revenues and expenses are translated at average rates during the year.

The functional currency of Limited continues to be the U.S. dollar.

The net foreign currency transaction loss in 2000 and 2001 was \$96,000 and \$20,000, respectively. During 2002, we recorded a net foreign currency transaction gain of \$154,000. For all years, the loss or gain has been included in the other expenses in the accompanying statements of income.

Derivatives

On January 1, 2001, we adopted SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities*, which establishes accounting and reporting standards requiring us to recognize derivatives as either assets or liabilities on the balance sheet and to measure those instruments at fair value. The adoption of SFAS No. 133 did not have a material impact on our financial position or results of operation.

We use derivatives to manage exposures to foreign currency fluctuations. The only type of derivative we use is foreign currency forward contracts. Our objectives for holding these forward contracts are to decrease the potential volatility of earnings and cash flows associated with changes in foreign currency exchange rates (see Note 8).

Revenue Recognition

We recognize sales when persuasive evidence of a sale exists; that is, a product is shipped under an agreement with a customer, risk of loss and title have passed to the customer, the fee is fixed or determinable, and collection of the resulting receivable is reasonably assured. Sales allowances are estimated based upon historical experience of sales returns or pricing concessions. We recognize revenue related to engineering and tooling services after service has been rendered, which is determined based upon completion of agreed upon milestones or deliverables.

We maintain an allowance for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We determine the adequacy of this allowance by regularly evaluating individual customer receivables and considering a customer's financial condition, credit history, and current economic conditions. If the financial condition of our customers were to deteriorate, additional allowances may be required.

At December 31, 2002, we had deferred revenue of \$358,000.

Research, Development, and Engineering

We perform internal research, development, and engineering activities, as well as research, development, and engineering activities contracted by our customers. Research, development, and engineering costs are expensed as incurred. Internal research, development, and engineering costs are included as a component of research, development, and engineering expenses. Research, development, and engineering costs of customer contracted research, development, and engineering activities are included in cost of goods sold. Revenue and expenses from funded contracts were each approximately \$500,000 in the year ended December 31, 2002. There were no funded contracts for the years ended December 31, 2000 and 2001.

Stock Compensation

Pursuant to the provisions of SFAS No. 123, *Accounting for Stock-Based Compensation*, we account for options granted to our employees pursuant to Accounting Principles Board Opinion (APB) No. 25, *Accounting for Stock Issued to Employees*, under which no compensation cost has been recognized. However, we have computed, for pro forma disclosure purposes, the value of all options granted during 2000, 2001 and 2002, using the Black-Scholes option pricing method with the following weighted assumptions: risk-free interest rates of 4.75%, 4.42%, and 2.74%; expected dividend yields of zero; expected lives of 6.2, 6.1, and 6.1 years; and expected volatility (a measure of the amount by which a price has fluctuated or is expected to fluctuate during a period) of 72.6%, 74.5%, and 74.4%, respectively. Had compensation cost for these plans been determined consistent with SFAS No. 123, our net income and earnings per share would have been as follows:

	Years Ended December 31,		
	2000	2001	2002
	(in thousands, except per share data)		
Net income (loss):			
As reported	\$ 14,834	\$ (17,764)	\$ (16,971)
Total stock-based compensation expenses determined under fair value based method for all awards, net of related tax affects	<u>(1,834)</u>	<u>(3,223)</u>	<u>(4,378)</u>
Pro forma net income (loss).....	<u>\$ 13,000</u>	<u>\$ (20,987)</u>	<u>\$ (21,349)</u>
Basic net income (loss) per share:			
As reported	\$ 0.73	\$ (0.83)	\$ (0.79)
Pro forma	0.64	(0.98)	(0.99)
Diluted net income (loss) per share:			
As reported	\$ 0.69	\$ (0.83)	\$ (0.79)
Pro forma	0.60	(0.98)	(0.99)

Earnings Per Share

Basic net income (loss) per common share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the year before giving effect to stock options and warrants considered to be dilutive common stock equivalents. Diluted net income (loss) per common share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the year after giving effect to stock options and warrants considered to be dilutive common stock equivalents. Set forth below are the disclosures required pursuant to SFAS No. 128 – *Earnings per Share*:

	Years Ended December 31,		
	2000	2001	2002
Basic earnings (loss) per share:			
Net income (loss)	\$ 14,834	\$ (17,764)	\$ (16,971)
Weighted average common shares	20,457	21,401	21,465
Basic earnings (loss) per share amount.....	\$ 0.73	\$ (0.83)	\$ (0.79)
Diluted earnings (loss) per share:			
Net income (loss)	\$ 14,834	\$ (17,764)	\$ (16,971)
Weighted average common shares	20,457	21,401	21,465
Options and warrants assumed exercised	1,179	-	-
Total common shares plus common stock equivalents.....	21,636	21,401	21,465
Diluted earnings (loss) per share amount.....	\$ 0.69	\$ (0.83)	\$ (0.79)

For the years ended December 31, 2001 and 2002, the effect of 577,431 and 314,569 shares, respectively, were excluded from the calculation of loss per share as their effect would have been antidilutive and decreased the loss per share.

Recently Issued Accounting Standards

In September 2001, the FASB issued SFAS No. 141, "Business Combinations," and SFAS No. 142, "Goodwill and Other Intangible Assets." SFAS No. 141 requires companies to apply the purchase method of accounting for all business combinations initiated after June 30, 2001 and prohibits the use of the pooling-of-interest method. SFAS No. 142 requires identifiable intangible assets to be recognized separately from goodwill. In addition, it eliminates the amortization of all existing and newly acquired goodwill on a prospective basis and requires companies to assess goodwill for impairment, at least annually, based on the fair value of the reporting unit. We adopted SFAS Nos. 141 and 142 on January 1, 2002, and there was no material impact on our financial position or results of operations.

In August 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets." SFAS No. 144 supersedes SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of," and the accounting and reporting provisions of APB Opinion No. 30, "Reporting the Results of Operations — Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions." SFAS No. 144 modifies the method in which companies account for certain asset impairment losses. We adopted SFAS No. 144 on January 1, 2002 and there was no material impact on our financial position or results of operations.

In July 2001, the FASB issued SFAS No. 146, "Accounting for Costs Associated with Exit or Disposal Activities." SFAS No. 146 requires companies to recognize costs associated with exit or disposal activities when they are incurred rather than at the date of a commitment to an exit or disposal plan. SFAS No. 146 replaces EITF Issue No. 94-3, "Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit an Activity (including Certain Costs Incurred in a Restructuring)," and will apply to exit or disposal activities initiated after December 31, 2002. We have reviewed the requirements of SFAS No. 146 and believe the adoption of this statement will not have a material impact on our financial statements.

In December 2002, the FASB issued SFAS No. 148, "Accounting for Stock-Based Compensation—Transition and Disclosure". This Statement amends SFAS No. 123 to provide alternative methods of transition for a voluntary change to the fair value method of accounting for stock-based employee compensation. Specifically, SFAS No. 148 prohibits companies from utilizing the prospective method of transition, the only method offered under the original

SFAS No. 123, in fiscal years beginning after December 15, 2003. However, the statement permits two additional transition methods for companies that adopt the fair value method of accounting for stock-based compensation, which include the modified prospective and retroactive restatement methods. Under the prospective method, expense is recognized for all employee awards granted, modified, or settled after the beginning of the fiscal year in which the recognition provisions are first applied. The modified prospective method recognizes stock-based employee compensation cost from the beginning of the fiscal year in which the provisions are first applied, as if the fair value method had been used to account for all employee awards granted, modified, or settled in fiscal years beginning after December 15, 1994. Under the retroactive restatement method, all periods presented are restated to reflect stock-based employee compensation cost under the fair value method for all employee awards granted, modified, or settled in fiscal years beginning after December 15, 1994. In addition, this Statement amends the disclosure requirements of SFAS No. 123 to require prominent disclosures in both annual and interim financial statements about the method of accounting for stock-based employee compensation and the effect of the method used on reported results using a prescribed specific tabular format and requiring disclosure in the "Summary of Significant Accounting Policies" or its equivalent. We have adopted the new disclosure requirements for 2002, and are currently evaluating the impact if we were to adopt the fair value method of accounting for stock-based employee compensation under all three methods.

In November 2002, the FASB issued FASB Interpretation No. 45 (FIN 45), "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others." This Interpretation addresses the disclosures to be made by a guarantor in its financial statements and its obligations under guarantees. The Interpretation also clarifies the requirements related to the recognition of a liability by the guarantor at the inception of a guarantee. Per the interpretation, initial recognition of a liability shall be applied only on a prospective basis to guarantees issued or modified after December 31, 2002. We have reviewed the requirements of FIN 45 and believe the adoption of this interpretation will not have a material impact on our financial statements.

Minority Interest

During 2001, we formed a new subsidiary, Three-D OLED L.L.C., that was partially owned by Dupont Displays. We consolidated this subsidiary with Dupont's ownership accounted for as a minority interest. In the second quarter of 2002, we agreed with Dupont Displays to liquidate Three-D OLED L.L.C., and enter into a non-equity based Strategic Manufacturing and Supply Agreement. Under that agreement, the parties will continue to work together in a fashion similar to the venture, but the relationship will be nonexclusive. Thus, we will have the right to purchase the glass panel output of a planned high-volume manufacturing plant located in Taiwan, announced by Dupont and RiTdisplay Technology Corporation. In addition, we will utilize other OLED glass panel sources. Upon the request of Dupont Displays, we will also manufacture OLED display modules for them at our display module assembly facilities in Beijing and Manila. We have not worked with Dupont since the liquidation.

Write-Down of Assets Held for Sale

During the second quarter of 2001, we announced our strategic decision to move our front-end manufacturing LCD line from Arizona to Asia. The front-end LCD line was operated in Arizona through the third quarter of 2001 and was then shut down. We now purchase all of our LCDs from third parties, although we sometimes purchase partially completed LCDs and complete the back-end operations on those LCDs in Manila. During the second quarter of 2002, we signed a Cooperative Agreement with a Chinese company under which we agreed to sell the equipment of our front-end LCD line and establish a supply agreement. Under the terms of the Cooperative Agreement, and in exchange for our front-end LCD equipment, we will receive \$3.0 million in cash, favorable LCD glass pricing, and flexible yet assured manufacturing capacity from this strategic partner. In the second quarter of 2002, as a result of signing the Cooperative Agreement, we realized a charge of \$4.5 million for the loss on the equipment to be sold to the Chinese company. This charge was reported as a separate line item in operating expense. We received \$2.1 million of the \$3.0 million sales price in 2002, all of which was recorded as a reduction in the carrying value of the assets held for sale. The sale of the equipment is expected to be completed in 2003.

(3) Business Acquisitions:

In September 2002, we purchased the assets and ongoing business of AVT, a privately held company that specializes in the design and integration of complex, high-resolution display systems. AVT designs and provides customized and ruggedized flat panel, touchscreen and rackmount systems for original equipment manufacturers. The purchase price of the acquisition was \$12.0 million, which we paid entirely in cash. The purchase agreement also calls for a residual purchase payment of \$2.0 million should the AVT division achieve certain revenue and profit objectives for 2002 and 2003.

The purchase price was allocated as follows (in thousands):

Current assets	\$	2,115
Property, plant and equipment.....		105
Customer list intangibles		3,000
Goodwill.....		7,774
Other long-term assets		40
Current liabilities		<u>(1,045)</u>
Net Acquisition price.....	\$	<u>11,989</u>

In December 2002, we purchased the stock of ETMA Corporation, a privately held electronic services manufacturer for OEM customers in the automotive, computer/server, medical monitoring, and Internet security industries. ETMA offers the manufacturing capabilities of six surface mount manufacturing lines, including one dedicated to new product introduction and prototyping activity. ETMA provides engineering support, automated printed circuit board assembly, in-circuit and functional testing, systems integration and box build, complete supply chain management, and turnkey packaging and fulfillment services. The purchase price of the acquisition was \$38.1 million, which we paid entirely in cash.

The purchase price was allocated as follows (in thousands):

Current assets	\$	17,389
Property, plant and equipment.....		1,454
Customer list intangibles		2,000
Goodwill.....		27,127
Current liabilities		(9,842)
Long-term liabilities		<u>(28)</u>
Net Acquisition price.....	\$	<u>38,100</u>

Total intangible assets from the acquisition of AVT and ETMA related to customer lists of \$5.0 million will be amortized over their weighted averaged useful lives of approximately four years.

The results of operations of AVT and ETMA have been included in the accompanying financial statements since their respective acquisition dates. The acquisition of AVT was considered immaterial and pro forma results are therefore not presented. Unaudited pro forma Consolidated Statements of Operations for 2001 and 2002, presented as if ETMA had been acquired at the beginning of each year, are as follows (in thousands, except per share data):

	Years Ended December 31,	
	2001	2002
	(unaudited)	
Net sales	\$ 172,533	\$ 151,547
Net loss.....	(21,044)	(17,065)
Loss per share (basic and diluted)	(0.98)	(0.80)

The pro forma includes a reduction in interest income related to the presumption that the acquisition occurred as of January 1, 2001 and 2002 and investments were therefore reduced by \$38.1 million. ETMA incurred an unusual item of \$3.6 million in 2001 for the write-off of accounts receivable.

(4) Debt:

Borrowing under line of credit and term loan agreements were as follows at (in thousands):

	<u>December 31,</u>	
	<u>2001</u>	<u>2002</u>
\$15.0 million revolving line of credit, interest due monthly at the bank's prime rate (4.25% at December 31, 2002) or at the LIBOR base rate (1.48% at December 31, 2002) plus 1.5%, unpaid balance due July 1, 2003	\$ -	\$ -
\$28.0 thousand vehicle financing for company vehicle at our Redmond, Washington facility.....	-	28
\$2.706 million loan due Bank of China, interest due quarterly at 5.85%, due April 30, 2003, secured by a \$3.0 million stand-by letter of credit issued under the \$15.0 million revolving line of credit	<u>2,706</u>	<u>2,706</u>
	2,706	2,734
Less current portion	<u>2,706</u>	<u>2,714</u>
Long-term portion.....	<u>\$ -</u>	<u>\$ 20</u>

In January 2002, we renewed a \$15.0 million unsecured revolving line of credit with Comerica Bank, which was set to mature in January 2003. In May 2002, we extended the maturity date until July 2003. The revolving line of credit contains restrictive covenants that include, among other things, restrictions on the declaration or payment of dividends, the sale or transfer of assets, and a minimum liquidity level. The company was compliant with the covenants at December 31, 2002.

Interest expense was \$262,000, \$101,000, and \$186,000, respectively, for 2000, 2001, and 2002.

(5) Stockholders' Equity:

In May 2000, we issued 2,150,000 shares of common stock at \$55.00 per share (the "2000 Offering"). In June 2000, we issued 322,500 shares of common stock at \$55.00 per share to cover over-allotments pertaining to the 2000 Offering. Expenses for the 2000 Offering totaled \$7,341,000, which were netted against the total proceeds of the offering.

On December 7, 2000, our Board of Directors authorized a stock repurchase program whereby our company, at the discretion of management, could buy back up to \$30.0 million of our common stock in the open market. During the year ended December 31, 2000, we purchased 241,381 shares at a cost of \$4,623,000. During the year ended December 31, 2001, we purchased 149,197 shares at a cost of \$2,526,000. During the year ended December 31, 2002, we purchased 260,600 shares at a cost of \$1,351,000.

During the second quarter of 2001, our Board of Directors adopted a stockholder rights plan (the "Rights Plan"). Under the Rights Plan, we issued a dividend of one Preferred Share Purchase Right (the "Right") for each share of common stock of our company held by stockholders of record as of the close of business on May 14, 2001. Each Right entitles stockholders to buy one one-thousandth (1/1000th) of a share of Series A Junior Participating Preferred Stock of our company at an exercise price of \$120.00 (subject to adjustment). The Rights Plan was not adopted in response to any specific takeover threat. The Rights Plan, however, was designed to assure that all of our stockholders receive fair and equal treatment in the event of any proposed takeover of our company, and to guard against coercive or unfair tactics to gain control of our company without paying all stockholders a premium for that control.

(6) Benefit Plans:

We have five stock option plans: the 1990 Stock Option Plan (1990 Plan), the 1993 Stock Option Plan (1993 Plan), the 1994 Non-Employee Directors Stock Option Plan (1994 Plan), the 1997 Stock Option Plan (1997 Plan), and 1998 Stock Option Plan (1998 Plan).

1990 Stock Option Plan

Under the 1990 Plan, there were options issued but unexercised to purchase 85,622 shares as of December 31, 2002. The 1990 Plan expired on May 1, 2001, at which time all unissued options expired.

The expiration date, maximum number of shares purchasable, and the other provisions of the options granted under the 1990 Plan were established at the time of grant. Options were granted for terms of up to ten years and became exercisable in whole or in one or more installments at such times as were determined by the Board of Directors upon grant of the options.

1993 Stock Option Plan

The 1993 Plan provides for the granting of options to purchase up to 770,909 shares of our common stock, the direct granting of common stock (stock awards), the granting of stock appreciation rights (SARs), and the granting of other cash awards (stock awards, SARs, and cash awards are collectively referred to herein as Awards). Under the 1993 Plan, options and Awards may be issued to key personnel and others providing valuable services to our company. The options issued may be incentive stock options or nonqualified stock options. If any option or SAR terminates or expires without having been exercised in full, stock not issued under such option or SAR will again be available for grant pursuant to the 1993 Plan. There were options outstanding to acquire 336,722 shares of our company's common stock under the 1993 Plan at December 31, 2002.

To the extent that granted options are incentive stock options, the terms and conditions of those options must be consistent with the qualification requirement set forth in the Internal Revenue Code of 1986 (the Code). The expiration date, maximum number of shares purchasable, and the other provisions of the options will be established at the time of grant. Options may be granted for terms of up to ten years and become exercisable in whole or in one or more installments at such time as may be determined by the plan administrator upon grant of the options. The exercise prices of options are determined by the plan administrator, but may not be less than 100% (110% if the option is an incentive stock option granted to a stockholder who at the time the option is granted owns stock representing more than 10% of the total combined voting power of all classes of stock of our company) of the fair market value of the common stock at the time of the grant. The 1993 Plan expires on February 24, 2003, at which time all unissued options will expire.

1994 Non-Employee Directors Stock Option Plan

The 1994 Plan provides for the automatic grant of stock options to non-employee directors to purchase up to 100,000 shares of our common stock. On April 26, 2001, the stockholders approved a proposal to amend our 1994 Automatic Stock Option Plan for Non-Employee Directors (the "1994 Plan"). Now, under the 1994 Plan, options to acquire 2,000 shares of common stock will be automatically granted to each non-employee director at the meeting of our Board of Directors held immediately after each annual meeting of stockholders, with such options to vest in a series of 12 equal and successive monthly installments commencing one month after the annual automatic grant date. In addition, each non-employee director serving on our Board of Directors on the date the 1994 Plan was approved by our stockholders received an automatic grant of options to acquire 5,000 shares of common stock and each subsequent newly elected non-employee member of our Board of Directors receives an automatic grant of options to acquire 5,000 shares of common stock on the date of their first appointment or election to our Board of Directors. Those options become exercisable and vest in a series of three equal and successive annual installments, with the first such installment becoming exercisable immediately after the director's second successive election to our Board of Directors (the First Vesting Date), the second installment becoming exercisable 10 months after the First Vesting Date, and the third installment becoming exercisable 22 months after the First Vesting Date (provided that the director has not ceased serving as a director prior to a vesting date). A non-employee member of our Board

of Directors is not eligible to receive the 2,000 share automatic option grant if that option grant date is within 30 days of such non-employee member receiving the 5,000 share automatic option grant. The exercise price per share of common stock subject to options granted under the 1994 Plan will be equal to 100% of the fair market value of our common stock on the date such options are granted. There were outstanding options to acquire 40,260 shares of our common stock under the 1994 Plan at December 31, 2002.

1997 Stock Option Plan

The 1997 Plan provides for the granting of nonqualified options to purchase up to 2,100,000 shares of our common stock. Under the 1997 Plan, options may be issued to key personnel and others providing valuable services to our company. The options issued will be nonqualified stock options and shall not be incentive stock options as defined in Section 422 of the Code. Any option that expires or terminates without having been exercised in full will again be available for grant pursuant to the 1997 Plan. There were options outstanding to acquire 1,259,136 shares of our common stock under the 1997 Plan at December 31, 2002.

The expiration date, maximum number of shares purchasable, and the other provisions of the options will be established at the time of grant. Options may be granted for terms of up to ten years and become exercisable in whole or in one or more installments at such time as may be determined by the plan administrator upon grant of the options. The exercise prices of the options are determined by the plan administrator, but may not be less than 100% of the fair market value of the common stock at the time of the grant. The 1997 Plan will remain in force until May 12, 2007.

1998 Stock Option Plan

The 1998 Plan provides for the granting of incentive stock options and/or nonqualified options to purchase up to 1,600,000 shares of our common stock. Under the 1998 Plan, options may be issued to key personnel and others providing valuable services to our company. The options issued will be incentive stock options or nonqualified stock options as defined in Section 422 of the Code. Any option that expires or terminates without having been exercised in full will again be available for grant pursuant to the 1998 Plan. There were options outstanding to acquire 1,168,988 shares of our common stock under the 1998 Plan at December 31, 2002.

The expiration date, maximum number of shares purchasable, and the other provisions of the options will be established at the time of grant. Options may be granted for terms of up to ten years and become exercisable in whole or in one or more installments at such time as may be determined by the plan administrator upon grant of the options. The exercise prices of the options are determined by the plan administrator, but may not be less than 100% of the fair market value of the common stock at the time of the grant (110% if the option is an incentive stock option granted to a stockholder who at the time the option is granted owns stock representing more than 10% of the total combined voting power of all classes of stock of our company). The 1998 Plan will remain in force until January 28, 2008.

Tax benefits from option exercises are credited to additional paid-in capital.

The following table and narrative summarizes the status of our five stock option plans at December 31, 2000, 2001, and 2002 and changes during the years then ended:

	2000		2001		2002	
	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price
Outstanding at beginning of year	1,737,397	\$ 7.76	1,974,668	\$ 14.75	2,086,969	\$ 14.97
Granted	528,873	33.95	535,295	19.44	1,153,699	9.21
Exercised	(228,063)	7.46	(235,665)	6.55	(39,183)	5.35
Expired or canceled	(63,539)	9.58	(187,329)	35.97	(310,757)	16.94
Outstanding at end of year	<u>1,974,668</u>	<u>14.75</u>	<u>2,086,969</u>	<u>14.97</u>	<u>2,890,728</u>	<u>12.59</u>
Exercisable at end of year	<u>485,050</u>	<u>\$ 7.12</u>	<u>617,906</u>	<u>\$ 9.81</u>	<u>1,042,169</u>	<u>\$ 11.48</u>
Weighted average fair value of options granted		<u>\$ 27.24</u>		<u>\$ 16.13</u>		<u>\$ 7.29</u>

The following table summarizes information about stock options outstanding at December 31, 2002:

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding at December 31, 2002	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number Exercisable at December 31, 2002	Weighted Average Exercise Price
\$ 0.32 - \$7.46	992,565	7.4	\$ 6.05	393,008	\$ 5.76
7.47 - 14.92	1,159,893	7.1	10.75	442,712	9.40
14.93 - 74.63	738,270	7.3	24.28	206,449	26.86
	<u>2,890,728</u>	<u>7.3</u>	<u>\$ 12.59</u>	<u>1,042,169</u>	<u>\$ 11.48</u>

401(k) Profit Sharing Plan

We have adopted a profit sharing plan (401(k) Plan) pursuant to Section 401(k) of the Code. The 401(k) Plan covers substantially all full-time employees who meet the eligibility requirements and provides for a discretionary profit sharing contribution by us and an employee elective contribution with a discretionary matching provision by our company. We expensed discretionary contributions pursuant to the 401(k) Plan in the amount of \$207,000, \$262,000, and \$200,000 for the years ended December 31, 2000, 2001, and 2002, respectively.

Pension Plan

On June 1, 2001, Pacific adopted a defined benefit pension plan (the Pension Plan) for its employees. The Pension Plan covers most regular Pacific employees. The Pension Plan benefits were retroactive to an employee's date of hire, resulting in a pension benefit obligation as of January 1, 2001 of \$249,000. The pension benefit obligation at December 31, 2001 and 2002 was \$349,000 and \$210,000, respectively.

(7) Income Taxes:

The following table presents the U.S. and international components of income (loss) from continuing operations before income taxes for the years ended December 31 consist of the following (in thousands):

Operations Before Income Taxes

	December 31,		
	2000	2001	2002
United States	\$ 12,895	\$ (29,752)	\$ (31,089)
International	<u>7,453</u>	<u>3,243</u>	<u>3,465</u>
Total Pretax Income	<u>\$ 20,348</u>	<u>\$ (26,509)</u>	<u>\$ (27,624)</u>

The provision (benefit) for income taxes for the years ended December 31 consists of the following (in thousands):

	2000	2001	2002
Current provision (benefit), net of tax credits utilized:			
Federal, net of tax benefit from stock option exercises	\$ 4,641	\$ (5,555)	\$ (2,163)
States	45	-	-
Foreign	780	797	486
	5,466	(4,758)	(1,677)
Deferred benefit.....	(626)	(4,575)	(9,021)
Tax benefit from stock option exercises.....	674	588	45
Provision for (benefit from) income taxes	\$ <u>5,514</u>	\$ <u>(8,745)</u>	\$ <u>(10,653)</u>

In accordance with SFAS No. 109, tax credits of approximately \$1,244,000, \$0, and \$0 were utilized in 2000, 2001, and 2002, respectively, and are included as a reduction of the current provision for income taxes in the consolidated statements of income.

The components of deferred taxes at December 31 are as follows (in thousands):

	2001	2002
Net short-term deferred tax assets:		
Uniform capitalization.....	\$ 1,224	\$ 1,653
Accrued liabilities and reserves not currently deductible.....	2,405	1,641
Allowance for doubtful accounts.....	76	56
Other.....	225	211
	\$ <u>3,930</u>	\$ <u>3,561</u>
Net long-term deferred tax (liabilities)/assets:		
Accelerated tax depreciation	\$ (4,556)	\$ (1,944)
Net operating loss and tax credit carryforward.....	5,153	12,745
Capital loss carryforward	1,299	1,288
Valuation allowance against capital loss carryforward	(1,299)	(1,288)
Valuation allowance against foreign tax credits	-	(776)
Investments in foreign affiliates	(378)	(383)
	\$ <u>219</u>	\$ <u>9,642</u>

We currently have \$13.2 million of net deferred tax assets resulting primarily from net operating loss and tax credit carryforwards. SFAS No. 109 requires that a valuation allowance be established when it is more likely than not that all or a portion of a deferred tax asset will not be realized. Changes in valuation allowances from period to period are included in our tax provision in the period of change. In determining whether a valuation allowance is required, we take into account all evidence with regard to the utilization of a deferred tax asset including our past earnings history, expected future earnings, the character and jurisdiction of such earnings, unsettled circumstances that, if unfavorably resolved, would adversely affect utilization of a deferred tax asset, carryback and carryforward periods, and tax strategies that could potentially enhance the likelihood of realization of a deferred tax asset. We believe that the net deferred tax assets of \$13.2 million will be realized based primarily on our projected future earnings and scheduling of our deferred tax liabilities. However, the amount of the deferred tax assets actually realized could differ if we have little or no future earnings. The valuation allowance increased by \$1,299,000 and \$765,000 in 2001 and 2002.

At December 31, 2002, we have a valuation allowance of \$2.1 million for deferred tax assets related to a capital loss carryforward and certain foreign tax credit.

Our capital loss carryforward expires in 2006. We have \$29.5 million of federal net operating loss carryforwards that begin to expire in 2022. We have other general business credit carryforwards that expire 2017.

A reconciliation of the U.S. federal statutory rate to our effective tax rate is as follows:

	<u>2000</u>	<u>2001</u>	<u>2002</u>
Statutory federal rate.....	35%	(34%)	(34)%
Effect of state taxes.....	2	-	-
Foreign earnings taxed at different rates.....	(5)	(3)	(5)
Other, net.....	-	1	(1)
Valuation Allowance.....	-	5	3
Credits for research and development.....	(5)	(2)	(2)
	<u>27%</u>	<u>(33)%</u>	<u>(39)%</u>

A deferred U.S. tax liability has not been provided on the undistributed earnings of certain foreign subsidiaries because it is our intent to permanently reinvest such earnings. Undistributed earnings of foreign subsidiaries, which have been, or are intended to be, permanently invested in accordance with APB No. 23, *Accounting for Income Taxes – Special Areas*, aggregated approximately \$7.2 million at December 31, 2002.

Although losses are expected to continue in the near term through the projected spin-off date, as of December 31, 2002, in accordance with SFAS No. 109, no valuation allowance has been recorded related to our net operating loss and tax credit carryforward, as we believe that the full realization of these deferred tax assets is more likely than not.

(8) Commitments and Contingencies:

Rent and Lease

In April 2001, Pacific began its lease of a build-to-suit factory in Manila. The term of the lease is 125 months. We employ our own employees at this new factory. Until April 2002, our back-end LCD processing operations were conducted by a third party subcontractor in Manila. Since that date, the Manila back-end LCD processing is performed by our own employees.

We own and occupy an approximately 97,000 square foot facility in Tempe, Arizona, which houses our U.S.-based manufacturing operations and our research, development, engineering, design, and corporate functions. We entered into a ground lease for this facility that extends through March 31, 2069, subject to renewal and purchase options as well as early termination provisions. The annual lease payments on the related land are approximately \$100,000, subject to certain escalation provisions.

Our future lease commitments under the non-cancelable operating leases as of December 31, 2002 are as follows (in thousands):

2003.....	\$ 3,646
2004.....	3,060
2005.....	2,581
2006.....	1,984
2007.....	1,550
Thereafter.....	<u>10,138</u>
	<u>\$ 22,959</u>

Rent expense was approximately \$553,000, \$712,000, and \$1,783,000 for the years ended December 31, 2000, 2001, and 2002, respectively.

Guarantee

In February 2002, we guaranteed up to \$450,000 of the debt of a start-up company, VoiceView Technology, Inc., a private company developing microdisplay products. As of December 31, 2002, the outstanding balance on the debt is \$428,000. This loan guarantee had a five year term and matures in January 2007. At this time, no liability has been recognized by us. We will be required to pay this guarantee to the lender if the start-up company defaults on its debt obligations.

Legal Proceedings

In 1991, we received a notice of potential liability at the Barkhamsted-New Hartford Landfill Site (the "Landfill") in Barkhamsted, Connecticut from the United States Environmental Protection Agency ("EPA"). Fifty-seven other entities received similar letters. In January 1992, we received a 104(e) questionnaire from the EPA which was completed and submitted during 1992. We received verbal notification that we had no further liability in the matter. According to the EPA, groundwater contamination at the site, which includes volatile and semi-volatile organic compounds and low concentrations of metals, constitutes a low-level threat. As a result of previous actions at the site, groundwater is the only medium requiring additional cleanup. All source material and principal threats have been addressed through the landfill capping and related activity completed in 1999. On February 28, 2002, we received notification from the EPA that the EPA believes we were an involved party and indicated that the EPA was seeking to negotiate an agreement with the involved parties to fund the EPA's chosen remedy of monitored natural attenuation of the groundwater. We have reached a settlement on that matter for \$65,000 and have no further liability with respect to this issue. This charge was recorded in sales, general and administrative expenses in 2002.

We are also involved in certain administrative proceedings arising in the normal course of business. In our opinion, the ultimate settlement of these administrative proceedings will not materially impact our financial position or results of operations.

Derivative Instruments

We have certain receivables denominated in Chinese renminbi. To eliminate our exposure to changes in the U.S. dollar/Chinese renminbi exchange rate, we have entered into forward contracts to protect our future cash flows. Our forward contracts generally range from one to six months in original maturity.

In accordance with SFAS No. 133, we designate such forward contracts as cash flow hedges. We account for changes in the fair value of our forward contracts, based on changes in the forward exchange rate, with all such changes in fair value reported in other comprehensive income. Amounts in other comprehensive income are reclassified into earnings upon settlement of the forward contract at an amount that will offset the related transaction gain or loss arising from the re-measurement and adjust earnings for the cost of the forward contracts. During 2002, there were no significant gains or losses recognized in earnings for hedge ineffectiveness and we did not discontinue any hedges because it was probable that the original forecasted transaction would not occur. As of December 31, 2002, there were no contracts outstanding.

(9) Segment Information:

We monitor and evaluate the financial performance of our operations by our two product lines (operating segments): ISD and Microdisplay. In the ISD segment, we focus on display products and our electronic manufacturing services. We specialize in custom and standard display modules utilizing various display technologies, including liquid crystal displays, or LCDs, organic light emitting displays, or OLEDs, and cathode ray tubes, or CRTs. Our display modules are of varying sizes and have varying levels of integration. At a minimum, each display module includes a display, a custom driver, and a flexible connector. We also provide ruggedized and customized monitors. We also provide value-added services, which increase our competitiveness, by assembling additional components onto the module based upon the specific needs of the customer. These additional components may include such items as keypads, microphones, speakers, light guides, and optics. Late in 2002, we expanded the value-added manufacturing services we provide in the ISD segment through our acquisition of ETMA Corporation. As a result of that acquisition, we now provide printed circuit board assembly, or PCBA, and box build capabilities to customers, even in products that do not need displays.

In our second business segment, referred to as the Microdisplay segment, we offer a range of LCoS product solutions with different levels of integration from individual images to optical light engines. The focused markets for our LCoS microdisplay products are large screen television sets, front projectors, and near-to-eye or personal display system applications.

The accounting policies of the operating segments are the same as those described in Note 2, *Summary of Significant Accounting Policies*. Non-specific operating segment expenses were allocated based upon estimated usage. Interest income was assigned to the ISD operating segment for 2000 and 2001 and was split between the ISD and Microdisplay segments for 2002. The worldwide average tax rate was used for all segments. The following includes financial information (in thousands, except share data) for our two operating segments:

	ISD	Microdisplay	Total
December 31, 2000			
Net sales	\$ 159,369	\$ 1,315	\$ 160,684
Other income	7,184	-	7,184
Provision for (benefit from)			
income taxes	7,770	(2,256)	5,514
Net income (loss)	20,904	(6,070)	14,834
Goodwill	-	-	-
	ISD	Microdisplay	Total
December 31, 2001			
Net sales	\$ 117,234	\$ 1,902	\$ 119,136
Other income (expenses)	7,270	(3,820)	3,450
Benefit from income taxes	(1,832)	(6,913)	(8,745)
Net loss	(3,732)	(14,032)	(17,764)
Goodwill	-	-	-
	ISD	Microdisplay	Total
December 31, 2002			
Net sales	\$ 86,587	\$ 1,439	\$ 88,026
Write-off of assets held for sale	4,545	-	4,545
Other income.....	1,745	1,747	3,492
Benefit from income taxes	(2,415)	(8,238)	(10,653)
Net loss	(3,867)	(13,104)	(16,971)
Goodwill	34,091	-	34,901

Property, Plant and Equipment data for the ISD and Microdisplay segments is not presented as it is not readily available and is not used by the key decision makers for managing the business.

We also track net sales and long-lived assets data by geographic location. Net sales by geographic area are determined based upon the location of the end customer while long-lived assets are based upon the physical location of our company's assets. Long-lived assets include property, plant and equipment, and intangibles for each geographic location. The following includes financial information (in thousands) for our geographic areas:

		North America		China		Other Foreign		Total
December 31, 2000								
Net Sales	\$	25,414	\$	61,835	\$	73,435	\$	160,684
Long-lived assets, gross		40,869		11,453		17,866		70,188
Goodwill		-		-		-		-
December 31, 2001								
Net Sales	\$	20,026	\$	48,310	\$	50,800	\$	119,136
Long-lived assets, gross		45,707		12,739		18,393		76,839
Goodwill		-		-		-		-
December 31, 2002								
Net Sales	\$	13,099	\$	34,984	\$	39,943	\$	88,026
Long-lived assets, gross		50,043		13,167		18,699		81,909
Goodwill		34,901		-		-		34,901

(10) Selected Quarterly Financial Data (Unaudited)

The following table summarizes the unaudited consolidated quarterly results of operations as reported for 2001 and 2002 (in thousands, except per share amounts):

	Quarters Ended							
	2001				2002			
	Mar 31	Jun 30	Sep 30	Dec 31	Mar 31	Jun 30	Sep 30	Dec 31
Net sales.....	\$ 35,616	\$ 25,013	\$ 26,594	\$ 31,913	\$ 23,110	\$ 24,087	\$ 18,584	\$ 22,245
Gross profit (loss) ...	4,373	(7,147)	(859)	1,255	208	603	535	1,547
Net income (loss)....	242	(11,348)	(3,996)	(2,662)	(4,310)	(6,640)	(3,380)	(2,641)
Earnings (loss) per common share:								
Basic	\$ 0.01	\$ (0.53)	\$ (0.19)	\$ (0.12)	\$ (0.20)	\$ (0.31)	\$ (0.16)	\$ (0.12)
Diluted	\$ 0.01	\$ (0.53)	\$ (0.19)	\$ (0.12)	\$ (0.20)	\$ (0.31)	\$ (0.16)	\$ (0.12)

The quarter ended June 30, 2001 included the \$3.8 million write-off of our investment in a start-up company. The quarter ended June 30, 2002 included the \$4.5 million charge related to the LCD line sale.

(11) Subsequent Events

In January 2003, we signed licensing and manufacturing agreements with Data International Co., Ltd. of Taiwan. The cost of the license is anticipated to be \$4.0 million of which \$1.0 million was paid upon signing and the other \$3.0 million is due over the next two years. The unpaid \$3.0 million is subject to reduction if certain revenue and margin targets are not met.

We recently announced that our board of directors has approved a decision to spin-off our microdisplay division into a newly created and separately traded public company to be known as Three-Five Microdisplay, Inc. or TFMD. We expect that the proposed spin-off will allow each company to focus attention and financial resources on its own target markets and also provide each independent company with greater capital financing flexibility to support growth opportunities in the future. We also expect that this separation will be beneficial to both companies by creating better opportunities for strategic alliances and partnerships with key customers, suppliers, and possible potential competitors. Under the proposed spin-off transaction, we would transfer our entire LCoS microdisplay business, including all related manufacturing and business assets, personnel, and intellectual property, to TFMD, a newly created subsidiary. We then expect to capitalize TFMD with approximately \$15 to \$25 million in cash and distribute 100% of TFMD's common stock to our stockholders of record pro rata as a dividend. We have filed a ruling request with the Internal Revenue Service to qualify the spin-off of TFMD as a nontaxable transaction. In addition, we expect to file a Form 10 with the Securities and Exchange Commission within the next 60 days.

providing detailed information regarding the proposed transaction. No stockholder vote will be required to affect the spin-off and no consideration will be required to be paid by our stockholders in order to receive the stock of TFMD.

THREE-FIVE SYSTEMS, INC. AND SUBSIDIARIES

**SCHEDULE II
VALUATION AND QUALIFYING ACCOUNTS AND RESERVES
For the Years Ended December 31, 2000, 2001 and 2002**

	<u>Balance at beginning of Period</u>	<u>Increases (Reductions) Charged to Costs and Expenses</u>	<u>Charged to Other Accounts</u> (in thousands)	<u>Write-offs</u>	<u>Balance at End of Period</u>
Allowance for doubtful accounts :					
Year ended 12/31/2000.....	\$ 750	\$ (316)	\$ -	\$ 5	\$ 439
Year ended 12/31/2001.....	439	(180)	-	-	259
Year ended 12/31/2002.....	259	282	-	(95)	446

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President's letter continued

THE YEAR IN REVIEW: MICRODISPLAYS

Our 2002 objective for the microdisplay division was to drive microdisplays into the marketplace. To support this objective, we focused on bolstering our technology position and accessing more markets for our LCoS products. The markets we focus on include rear-projection, high-definition televisions, front-projector multimedia and home theater projectors, and "near-to-eye" or personal display applications, including head-mounted monocular or binocular headsets or viewers for industrial, medical, military, commercial, and consumer applications.

On the projection side of our microdisplay business, we realized that getting LCoS into consumer products demanded we do more to help our customers get to market faster. So within six months, we designed and delivered a turnkey, prototype cost-effective light engine to support customer applications. This light engine, which we named Spitfire, is available as a reference design for our customers. We believe that it addresses both cost and integration issues for our customers, allowing them to move their products quicker to market introduction.

One of the critical components in a microdisplay light engine is the system used to manage the flow of color. Several companies, including ours, rely upon the color management system developed by ColorLink, Inc., a leader in this field. To insure continuing access to this color management system, we joined existing investors, including Intel and Viewsonic, as an investor in ColorLink. This move to insure the existence of a reliable, available color management system directly supports our objective to drive microdisplays into the marketplace.

Getting LCoS projection products into the market has taken more time than originally anticipated. The television market, however, still offers a large opportunity. Compared to competitive alternatives such as DLP or LCD polysilicon, we believe that liquid crystal on silicon has higher resolution image quality and will ultimately provide the lowest price per pixel, high-resolution image. This belief was validated when top-tier companies such as Sony, Toshiba, Hitachi and Philips, announced HDTV products based on liquid crystal on silicon technology. They believe, as we do, that liquid crystal on silicon will be the ultimate winner in this race.

We are the only independent liquid crystal on silicon microdisplay company with a fully developed manufacturing facility able to support high-volume manufacturing. The fact that we make our own microdisplays sets us apart from the bulk of our competitors. This allows us to keep tight controls over our cost structures, yields, product enhancements and the proprietary nature of our manufacturing process. I think those factors will be key as we push into high-growth areas, such as the Chinese entertainment and television markets.

In the near-to-eye microdisplay field, we completed two acquisitions in 2002 that gave us access to new markets and customers. First, we acquired the intellectual property and assets of Zight Corporation, the leader in near-to-eye liquid crystal on silicon microdisplays. We then added the assets and intellectual property of InViso, a company with advanced near-to-eye optical solutions for microdisplays. These two acquisitions made us the leader in the emerging high-resolution near-to-eye market, and we named the business created by those acquisitions our Personal Display Systems group. This Group added several new customers and reported over \$700,000 in near-to-eye microdisplay revenue in 2002. In just six months, we transferred the Zight microdisplay technology to our Tempe manufacturing facility. Today, that manufacturing line has been qualified by key customers and produces all of our near-to-eye microdisplay products.

Finally, in an emerging technology, such as liquid crystal on

silicon, focusing on enhancing your intellectual property portfolio is important. Our activity in this area increased dramatically in 2002. We grew our number of issued patents from nine to 78 and our patent disclosures and filings from 51 to 241 in just one year.

OUTLOOK

Our ISD Division now holds a unique and valuable position. Building upon a long history of display technology expertise, this division now possesses a global footprint of end-to-end solutions that span design engineering to Asian low-cost manufacturing. This position has been enhanced with internal growth and acquisition activity that, when combined, will generate the diversity in customer base that we have sought for so long. In fact, we fully expect that no single customer will generate greater than 20% of our total revenue in 2003.

If successful, this will be the first time in the history of our company that we will have achieved such a healthy mix of customers and markets.

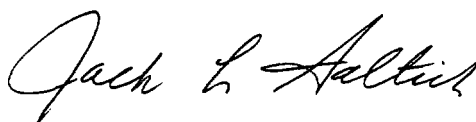
Our Microdisplay division is leading the way in the quickly emerging high-resolution, near-to-eye market with customers that are developing exciting and revolutionary new products. We believe that we will see notable developments this year with the introduction by our customers of a variety of headset applications in the industrial, medical, military, and rapidly growing personal entertainment and video game marketplaces. In addition, the microdisplay engine and panels we have developed for projection applications are generating interest with several customers that plan to deliver cost-effective, LCoS-based microdisplay televisions and other projection products to the market in 2003.

SUMMARY

As we entered 2002, I committed to you that in one year we would look like a very different company. While we struggled with a very challenging environment on many fronts throughout 2002, I believe that we delivered on that commitment. In the middle of 2003, we will spin off our Microdisplay division into a separately traded public company to be known as Three-Five Microdisplay, Inc., or TFMD. TFS will continue to be traded on the New York Stock Exchange and will consist solely of our ISD division. TFMD shares will be issued as a dividend to all TFS shareholders, and that stock is expected to trade on the NASDAQ. I will have the unique opportunity to provide leadership for both companies, as Chairman of the Board for TFMD and as President and CEO for TFS.

We believe that this separation will be very beneficial to each of our divisions and all of our stockholders and employees. TFS will continue to drive growth with new customers in new markets and capitalize on synergies and additional opportunities that we created through acquisitions. TFMD will continue to drive microdisplays into the marketplace by working closely with strategic partners and customers to validate the advantages of our LCoS microdisplay technology. I look forward to providing leadership in what promises to be an exciting 2003, a year in which each of our newly organized companies will have the freedom to focus, explore, and expand upon its own unique and exciting opportunities.

Sincerely,



Jack L. Saltich
President and CEO

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